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THE VAGINAL SMEAR

Practical Applications in the Diagnosis of Cancer of the Uterus

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In 1928 Papanicolaou [1] demonstrated his ability to make a diagnosis of cancer of the uterus by the observation of single malignant cells cast off from the tumor into the vaginal secretion. This was a cytologic diagnosis rather than a diagnosis made by a study of the architecture of the tissue, such as is done by pathologists. Subsequently, in 1941 and 1943, Papanicolaou and Traut [2] published articles and a monograph describing their experiences. The monograph, illustrated by many plates of benign and malignant cells, suggested to the medical profession that their method was a success and should be used. In 1943 Meigs and others,[3] confirming the work of Papanicolaou, reported a series of cases studied at the Massachusetts General Hospital and in 1945, in a second article,[4] gave convincing evidence of the value of the method. At present 2,749 cases with an error of only 3.2 per cent have been studied.

It is obvious to those who are interested in uterine cancer that this method is of extreme value in enabling the physician, if not to make a definite diagnosis, at least to screen satisfactorily women who come for routine examination. A positive smear indicates that careful further studies both by smear and by biopsy are indicated. A negative smear indicates that at the time it was taken cancer cells were not found on the slide. If the patient's symptoms or the appearance of the cervix is suggestive, more smears must be taken because there is convincing evidence that in certain instances shedding of the cells does not occur. Six and one-tenth per cent of 339 cancers did not show malignant cells. The positive smear is an indication that further investigation must be carried out until proof of cancer is found. Without other corroborative evidence I have rarely allowed a positive vaginal smear to be the sole reason for radical surgery. The smear diagnosis is important and its value has been definitely settled, but how far one is to go in the treatment of patients with a positive smear and a negative biopsy has not yet been decided.

It has been suggested that smears be taken directly from the cervix and by use of a cannula from the endocervix and endometrial cavity. This is a splendid idea and without question it is of greater value in some instances than the vaginal smear, but this method loses the importance of the simplicity of the vaginal smear technic. The real value of the vaginal smear is the ease with which it can be made by general practitioners in their offices. Those who can easily carry out the more complicated method, should do it in addition to making the vaginal smear. The vaginal secretion, although it is more dilute than that removed directly from either the cervix or the endometrial cavity, gives one a greater chance to find cast-off cancer cells because all cells, not merely the cells aspirated from a small area of cervix and endometrium are shed into the vaginal secretion. There is no objection to cervical or endometrial smears, but on the whole for the purposes here mentioned greater concentration on the vaginal smear method will produce better results. The vaginal smear is taken by means of a small glass tube and a rubber bulb. The tube is placed in the vagina with the bulb compressed, the bulb is then released and the vaginal secretion removed by suction. The secretion is then blown on a glass slide, spread out with the tip of the glass tube to make a good film and then placed immediately in a solution of one part ether and one part 95 per cent alcohol. Smears may remain in the fixation two to three weeks without showing any signs of deterioration. It is important that the slide be placed in the fluid immediately after the secretion has been placed on the slide so that the maximum benefit of fixation may be secured. This is a simple method, and if it is complicated by the necessity of the use of speculums and cannulas it will defeat its own purpose, which is simplicity and accuracy.

In this paper it is not necessary to give the directions for staining methods or the method of diagnosis of individual cells. This has been included in numerous articles and in Papanicolaou and Traut's monograph, which can be easily obtained. However, there are a few characteristics of the cells which are extremely important. The nucleus of the cell is the main diagnostic criterion. The cancer cell has a large abnormal nucleus, and in groups a variation in size and shape is obvious. The large nuclei of cells from cervical cancer are radically different from those of the normal cells of the cervical epithelium. It is important to note the paucity of cytoplasm compared to the amount seen in the normal cell. In the cancer cell the large nucleus takes up most of the cytoplasmic space and the ratio of nucleus to cytoplasm is different from that in the normal cell. In cancer of the endometrium the same criteria

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1. Papanicolaou, G. N.: New Cancer Diagnosis, Proc. Third Race Betterment Conf., Jan. 2-6, 1928, pp. 528-534.

2. Papanicolaou, G. N., and Traut, H. F.: Diagnostic Value of Vaginal Smears in Carcinoma of Uterus, Am. J. Obst. & Gynec. **42:** 193-206 (Aug.) 1941; Demonstration of Malignant Cells in Vaginal Smears and Its Relation to Diagnosis of Carcinoma of Uterus, New York State J. Med. **43:** 767-768 (April 15) 1943; Diagnosis of Uterine Cancer by Vaginal Smear, New York, The Commonwealth Fund, 1943.

3. Meigs, J. V., and others: Value of Vaginal Smear in Diagnosis of Uterine Cancer, Surg., Gynec. & Obst. **77:** 449-461 (Nov.) 1943.

4. Meigs, J. V., and others: Value of Vaginal Smear in Diagnosis of Uterine Cancer: Report of 1,015 Cases, Surg., Gynec. & Obst. **81:** 337-345 (Oct.) 1945.

are true but there is less variation in the size and shape of the nucleus and less evidence of a differing in size from the normal nucleus. Yet the difference is real and can be observed. The presence of histiocytes and many leukocytes is a suspicious observation but is not diagnostic. The presence of blood is important, but its absence does not indicate a negative diagnosis. The most important observation is the abnormal nucleus and its size in relation to that of the rest of the cell. Diagnosis by means of the vaginal smear is a cytologic one, and any one with a good background in histology and cytology can be trained to be a satisfactory technician. It is difficult for the pathologist to be interested in this method, for he is trained to observe the relation of cells to architecture and the importance of invasion. Diagnosis by vaginal smear is painstaking and slow, and twenty minutes is not too long for the examination of a slide. Cases have been missed in the laboratory; yet after a review of the slide one or two cells were found that had been missed because the cytologist had not covered the entire slide the first time. Well trained technicians should be used to screen out negative slides, but in the process of screening suspicious cells should be noted, marked and presented to the expert for final decisions.

Cancer of the Cervix. — It is easier to diagnose cancer of the cervix than cancer of the endometrium. It is obvious that the individual cancer cells are cancer cells, and even though the tumor cannot be found at biopsy, nevertheless it must be there. There is such a definiteness about a positive cervical cancer cell that even if tumor is not found on multiple sections it would take complete serial sections to prove it was not present. It is quite possible, for it is known that one can make the diagnosis of "cancer in situ," that there is a time when the cancer is not over a few cells in size and it would be impossible for the pathologist to find it unless all the endocervix and squamous portion were observed under the microscope. This is as a rule impossible because of inability to spend the time and the money for serial sections. It is sad to think that it cannot be proved that positive cells mean cancer. If one could prove that a positive cell seen in a vaginal smear means cancer, even though infinitesimal, what a great advance would have been made! Nineteen slides have been called positive, but the pathologist has not been able to find the cancer. The cells were definite; yet they had to be called mistakes because the department of pathology has been unable to find the tumor. This is not the fault of the pathologist, for they have been extremely cooperative and have cut hundreds of sections, some of them serially; nevertheless it is essential in such a case that every single bit of cervical epithelium be viewed because it is felt that the cancer must be there. The number of errors for false positive smears is now at 2.0 per cent. That this is not a true picture is a definite fact in the opinion of those in the laboratory, but there is little one can do about it at this time. In the future it will be necessary to be much more exhaustive in the histologic study of the cervical epithelium.

In a certain group of patients a slide has been called negative when there was tumor in the cervix. This is explained by the fact that the tumor presumably did not shed cells. Perhaps the patient had just had a douche. It is impossible to make a diagnosis if the cells are not present, just as it is impossible for the pathologist to find tumor in a piece of tissue that has been removed from a noncancerous area. The pathologist does not call it a mistake when he says "no tumor present," even when it is obvious clinically that a tumor exists, for when he does the biopsy or cuts the block of tissue cancerous material may not be on his slide. Thus it is possible for the cytologist to miss cancer when it is present in the patient. In 3.5 per cent of the cases of cervical cancer in which the slides were called negative, re-observation still did not show signs of tumor cells on the slides. The diagnosis cannot be made if there is no shedding of cells, if there are no cells on the slides or if not even a small number of cells are seen in the study of the slide. This is a definite hazard of the smear method, but histologic examination of tissue presents the same problem.

Cancer of the Endometrium.—In the diagnosis of cancer of the endometrium the same problems are encountered, but there is an occasional confusion in calling cells malignant that are definitely not cancerous, and vice versa. It is because there is not a great deal of difference between normal and malignant endometrial cells. The diagnosis of endometrial cancer calls for more expert observation than does that of cancer of the cervix. It can be made and the figures are improving but the problem is difficult. The error of false negative observations in endometrial cancer is 20 per cent. Of 80 cases of proved endometrial cancer, 16 negative smears were reported and 12 of these did not show malignant cells on reexamination. These mistakes are subject to the same criticism as are the false negative group in cancer of the cervix, though the percentage is much higher. This may be explained partially by degeneration of the malignant cells from endometrial cancers before they are shed in the vaginal secretion. The more familiar the cytologist becomes with the diagnostic criteria the more accurate he becomes in his diagnostic acumen.

There can be no doubt of the value of the vaginal smear in the diagnosis of cancer of the cervix and of the endometrium. It should be an accepted fact everywhere that the diagnosis can be made this way. There are many advances to be made by this method of cancer research, the most important of which is its aid in making an early diagnosis and thereby permitting earlier and more satisfactory methods of treatment. The practical aspects of the problem will be presented in a few case reports demonstrating the value of the vaginal smear in the diagnosis of cancer in the early stages and in others when the diagnosis was made by smear in totally unsuspected cases.

In the series of 2,749 cases are included 339 cases of cancer. In 25 of these cases either carcinoma was unsuspected before a vaginal smear was taken or the vaginal smear was of great aid in the primary diagnosis.

REPORT OF CASES

Reports of 2 totally unsuspected cases of cancer follow:

E. W., a 30 year old woman who had two children, came to the outpatient department with the chief complaint of pain in the right lower quadrant of the abdomen. A pelvic examination was entirely negative. A routine vaginal smear was reported as positive. A biopsy was made two weeks later and was reported indicative of chronic cervicitis. A subsequent biopsy four days later showed epidermoid carcinoma of the cervix, grade 2. A radical hysterectomy was performed.

C. H., a woman aged 68, came to a private physician's office with the chief complaint of slight vaginal bleeding and discharge. Clinically nothing abnormal was seen except senile vaginitis, and many Trichomonas vaginalis were found in the vaginal

secretion. The result of a vaginal smear was reported as doubtful. The bleeding and discharge persisted under treatment. However, two subsequent vaginal smears were positive. A dilation and curettage were performed and showed adenocarcinoma of the endometrium.

These 2 cases of uterine cancer, 1 cervical and 1 endometrial, emphasize the importance of the vaginal smear in the detection of early cancer. Neither of the cases was suggestive enough clinically to warrant biopsy, and both would have been missed except for the routine vaginal smear.

There is a special group of cases in which the vaginal smear method is of real practical value. These are cases of carcinoma treated in the past by radiation, in which the patients are watched routinely in the tumor clinic for possible recurrence of their disease. The importance of the vaginal smear method in this instance is illustrated by the 2 following case reports.

N. O., a woman aged 51, was given routine roentgen ray and radium therapy for an epidermoid carcinoma of the cervix, grade 2, stage 2, in 1941. On routine follow-up in the tumor clinic she had repeatedly positive smears over a period of six months in 1944. During this time she had no symptoms and was considered negative on clinical examination. One biopsy during this interval was reported as revealing "chronic inflammation." Six months after the first positive vaginal smear, tissue obtained from the vaginal vault with great difficulty, under anesthesia, showed epidermoid carcinoma of the cervix.

M. M., a woman aged 77, was given routine roentgen ray and radium therapy in 1944 for an epidermoid carcinoma of the cervix, grade 3, stage 3. On routine follow-up in the tumor clinic she had repeatedly positive smears over a period of eleven months. Evidence of disease could not be seen clinically and a suggestive area could not be detected for biopsy. The patient was asymptomatic. Eleven months after the first positive vaginal smear, a specimen for biopsy secured from the apex of the vagina showed epidermoid carcinoma of the cervix.

This type of case points out the importance of the vaginal smear in the routine examination of the Gynecological Tumor Clinic. In both these cases it was impossible to tell clinically whether disease was present. It is difficult to obtain specimens for biopsy from irradiated patients, and some screening method by which certain cases can be chosen for further study is of great value. It should be pointed out that the diagnosis by vaginal smear in this group of irradiated patients is more difficult than that of untreated patients. However, with careful study few false positive or negative smears will be reported in this group.

The next 2 cases are representative of a real problem. These are 2 patients who had clinically suspicious cervices and vaginal smears positive for cancer cells but in whom biopsies were negative. The question of whether radical surgical intervention should be performed in such instances is still unanswered.

M. S., a 35 year old woman who had four children, came to a private physician's office with the chief complaint of intermenstrual spotting of five to six weeks' duration. Pelvic examination revealed a lacerated cervix. Three vaginal smears were reported positive. Two specimens for biopsies taken at the same time as vaginal smears were made were reported as indicative of acute and chronic endocervicitis. A radical hysterectomy was performed. The final pathologic diagnosis was carcinoma in situ of the cervix.

L. S., a 45 year old woman who had two children, came to a private physician's office for routine physical examination. At pelvic examination, the cervix presented a normal appearance. The patient had had a supravaginal hysterectomy some years previously. A routine vaginal smear was positive for cancer cells. Biopsy showed only chronic cervicitis. A cervicectomy was performed. The final pathologic diagnosis was carcinoma in situ.

It is important to note that there is a certain group of early cases in which the diagnosis by vaginal smear is more accurate than that by biopsy. If the cervix presents a generally suspicious appearance it is difficult to know what portion to use for biopsy. For this reason even repeated biopsies may not disclose abnormalities. The problem of treatment in this type of case is especially important; if cancer is present, it is in an early stage and is curable.

The last report is that of an unusual case in which the vaginal smear was the only method of making a diagnosis.

R. W., a woman aged 80 who had had nine children, came to a private physician because of symptoms referrable to a leukoplakia of the mouth. She was given estrogen therapy, and three days later vaginal bleeding developed. A routine vaginal smear was positive. Since a Le Fort operation for prolapse had been performed fourteen years previously, she could not be properly examined pelvically. At operation the Le Fort colpoplasty was taken down, the cervix was visualized and a specimen for biopsy was taken. The biopsy was reported as epidermoid carcinoma, grade 4.

This case has been presented merely as an example of the aid which the vaginal smear may render in diagnosis when pelvic examination is impossible.

CONCLUSIONS

1. The diagnosis of cancer of the cervix and of cancer of the endometrium can be made with a high percentage of accuracy by the vaginal smear method, as first suggested by Papanicolaou.

2. The diagnosis in patients with cancer of the uterus can be missed by this method if the tumor does not shed tumor cells.

3. The method should be of tremendous value in the routine screening of patients either in the clinic or in the hospital.

4. Early cases of cancer, i. e. "cancer in situ," can be diagnosed by this method.

5. A positive vaginal smear should not be regarded as an indication for hysterectomy. It should indicate that specimens for biopsy should be taken so that the pathologist may confirm the observations disclosed by the vaginal smear.

6. This method is not an office procedure; it should be interpreted by those trained in cytology and in the smear method of making a diagnosis.

ABSTRACT OF DISCUSSION

DR. WARREN C. HUNTER, Portland, Ore.: The author mentioned the reluctance of pathologists to examine material other than in form for biopsy, stating that they have been trained to depend on pattern in evaluating the malignant state of tissue. Naturally, one does prefer continuity and pattern, but there is no reason for a refusal to try other methods of diagnosis merely because of preference. For a long time, pathologists have been asked to look for cancer cells in transudates and have found them on occasion. Actually, there is nothing mysterious about the cytologic method. Any cell reaching the surface, whether normal or abnormal, is cast off and may retain its form long enough to be stained and identified. Even in tissue sections one pays attention to individual cell structure in addition to tissue pattern, degree of differentiation, polarity of cells and heterotopia as evidences of neoplasia. The cytologic features of tissue sections are equally applicable to single cancer cells and to groups of such cells. My experience with the method began about eighteen months ago. One soon becomes able to spot cancer cells in surveying smears under low power magnification by such important features as nuclear hyperchromatism and reduced nuclear cytoplasmic ratio, just as easily as one makes

out immature blood cells in a blood film. Other important features, such as the lack of individual cell boundaries, are likewise readily appreciated under low power magnification. Familiarity with individual cancer cells opens a new vista of cellular pathology in tissue sections, in that one sees finer details than one ever thought existed when studying cells en masse. As the author brought out, there are drawbacks to the method. At present there are too few physicians and too few technicians to carry the load. Some smears can be examined in a few minutes. The questionable ones may take thirty or even forty-five minutes. Then, too, postradiation changes are on occasion rather troublesome. I have not yet tried the modification of Ayre, mentioned by Dr. Traut. The original method has been modified somewhat in that a tube is not used but the material is taken on the speculum and then the smears are made, the remainder being placed in alcohol-ether, embedded in paraffin, sectioned and stained by the Papanicolaou method so that both smears and sections are available.

DR. JOE VINCENT MEIGS, Boston: I enjoyed Dr. Rubin's paper. He has done something that is of extreme value. I cannot but believe, as I see patients in my office and know that some of them have menstruated from the age of 14 until they are 24 or 26 before they tried to have children, that to add contraception to that insult to nature is wrong. I think that lack of child bearing accounts for a number of cases of endometriosis. The comparison of private patients who have their first babies at the age of 26 or 27 and the patients seen in charity wards who have their babies when they are 18 and 19 is very striking. A great deal of attention should be paid to what Dr. Rubin says. Physicians ought to advise girls who are just married to have children and not try to teach them how not to.

MEASURES FOR THE PROTECTION OF NEWBORN INFANTS

I. Description of Measures Instituted in May 1937 at Long Island College Hospital

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and
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Because the newborn infant is particularly susceptible to certain types of infection, special precautions must be taken for his protection as well as for that of his companions in the nursery. All have become familiar with the fact that epidemics can and do occur in nurseries for newborn infants, even in elaborately equipped hospitals of the highest professional standing. Most publicized among the conditions that cause such epidemics is the dreaded diarrhea of the newborn. This disease sometimes carries a mortality rate as high as 80 per cent and taxes to the utmost the resources of the most expert pediatricians. Because exhaustive researches have not disclosed its cause or the means of its transmission, its control is exceedingly difficult even under ideal conditions. The only effective weapon in combating this scourge of modern nurseries is a meticulous technic of isolation rigidly applied to infants who have been afflicted with the disease or who have been exposed to it.

Far more important, though usually less dramatic, are infections of the skin, of the respiratory tract, of the eyelids and even of the eyes. Because of the prophylaxis, only 1 case of gonorrheal ophthalmia has occurred among the newborn infants of the Long Island College Hospital during the past twenty years, although many of their mothers had gonorrhea. On the contrary, cutaneous and respiratory infections have not been rare; they tend to spread rapidly from patient to patient and may become generalized and result in general sepsis. Although chemotherapy and antibiotic and serum therapy have revolutionized the control of certain varieties of generalized infections, certain other types resist all forms of treatment and end fatally. As a consequence, there is a wholesome horror of these conditions.

As to respiratory infections, no specific prophylactic measures have been adopted, pending the results of studies in progress elsewhere on the use of aerosols and ultraviolet radiation.

However, our routine for the prevention of infection of the skin has been most effective, and will be discussed later in this paper.

This paper, then, will first discuss the factors in spreading infection, and will follow with the corrective measures suggested.

FACTORS IN SPREADING INFECTION

The circumstances that favor the development of the common types of nursery infections are:

1. Unnecessary contact with visitors, nurses and physicians
2. Inadequate isolation of the infants from one another in the nursery
3. Faulty technic for preventing the spread of contamination through (*a*) unsatisfactory nursing assignments, (*b*) common bathing and common weighing facilities, (*c*) inadequate facilities for sterilization of bottles, milk mixtures and other materials used in the care of infants, (*d*) the common utility room and (*e*) the proximity of uncontaminated units to isolation units.

1. Unnecessary contacts, especally with visitors, are an important source of infection. In practically every community in this country the causative agents of the diseases may be introduced into the maternity and nursery units by the mother or her visitors at almost any time. Unfortunately, visitors are a menace of the first magnitude from the point of view of persons attempting to control infection. Yet in some hospitals no restriction is placed on the number of visiting hours or on the number of visitors. It is not unusual for visitors to come to the mother's bedside in uncovered street clothes, and sometimes visitors with severe colds or visible cutaneous lesions are admitted. Frequently there is no age limitation for visitors to the mother, and the children, who are the most frequent hosts and carriers of infection, are permitted to have contacts with the mother. If visitors could be adequately restricted, the desirable goal of close relationship between mother and infant might sooner be realized without the present appalling risks.

To examine nurses carefully and exclude from the nursery any who are found to harbor infection is an elementary precaution that is not universally observed. In many institutions nurses do not wear masks and gowns while caring for infants. Requirements for physicians are subject to precisely the same criticism.

2. Inadequate isolation of the infants from one another is also a possible means of spreading infection. It is common practice to have large nurseries in which in certain instances more than 30 infants are

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quartered in a single room. They may be but a few inches apart, and even if they are farther apart their presence in a single large room gives maximum opportunity for the spread of all types of infection to this large group.

3. A third means of spreading infection is its transmission through some intermediary.

a. The primary factor in this spread is the time-honored practice of the blanket assignment of nurses who are on duty in nurseries. That is, a nurse is assigned to certain general tasks, such as the bathing or feeding of a large group of infants or the administration of medication to the entire group. The clearly desirable alternative is the assignment of the entire care of a small group of infants to an individual nurse. It is obvious that each nurse who has a general assignment will have contact with all the babies in a unit, whether the unit is large or small, and that if infection is present she might carry it to all the infants with whom she has contact.

b. Another important item is the common bathing and weighing room. Usually there is but one room for this service in each nursery, and if two nurseries adjoin each other such a room may be used for both nurseries. In any case, every baby in either one or two large units is taken to a central place, which becomes contaminated if and when infection attacks any infant or infants in the group. With such a setup it is inevitable that there should be widespread transmission of infection when it occurs.

c. Similarly, infections spread because of inadequate facilities for sterilization. The usual practice has been to locate the formula room for the preparation of fluids, milk mixtures and materials of all sorts for infants on the same floor as the nurseries or, worse still, adjacent to the children's medical wards. The average formula room is a single room to which utensils are usually returned without sterilization after their use by patients. Naturally, the entire formula room may be contaminated if any infant in any nursery or other unit served by it has become infected. The precautions which heretofore have been relied on as effective are these: Bottles, nipples and utensils are washed and sterilized in the formula room. Once the sterilization has been completed, the room is usually washed with soap and water and the persons who are to prepare the mixtures thereupon follow a technic which is surgically correct in preparation of the milk mixtures and materials. These precautions are worthless, however, for any contamination which has been introduced at any time is still present and contaminates the mixtures under preparation, and eventually the infants to whom they are given. Furthermore, milk and other foodstuffs are taken into the formula room without special handling designed to avoid the introduction of contamination from outside. Of course, pasteurization or autoclaving could obviate such error and is to be recommended.

d. Of particular interest is the common utility room: This ancient institution is even more dangerous as a means of spreading infection than the common bathing and weighing room. Such a room is usually located on the same floor as the nurseries and is used as a storage room for milk mixtures and other materials needed in the nurseries. Before the feedings are given to the infants, the bottles are warmed and the nipples are adjusted in this room. Nurses who use the facilities of the utility room may come from any unit on the floor, perhaps even from the units for the isolation of infected infants and those in the suspect nursery. It is obvious that any contamination which is brought to the utility room from any source must inevitably be widely distributed by all who use that room.

e. Another menace is the proximity of isolation units to uncontaminated units: It is common practice to locate isolation nurseries on the same floor as the uncontaminated nurseries or even to make these isolation facilities an integral part of the uncontaminated nursery setup. Only the perfect isolation technic such as is used in the best managed hospitals for infectious disease can possibly afford protection when such a setup obtains. This perfect technic is rarely employed in maternity hospitals, but certainly could be introduced to general advantage.

CORRECTIVE MEASURES SUGGESTED

In the hope and expectation that we could correct many of the defects noted, we have made extensive changes in the nurseries at the Long Island College Hospital in Brooklyn, which were completed except for one step by May 1937.[1] The service in which these changes have taken place is located in a general hospital in Brooklyn, which cares for about 1,500 infants annually. Before these alterations were made, the routine was similar to that used in first class teaching hospitals. While our results have compared favorably with the best so obtained, they were not satisfactory in our opinion. When infection occurred, its spread could not always be limited by the application of the familiar methods of management.

The discussion of the corrective measures will follow in the same order as did the discussion of the defects. First, then, the limitation of unnecessary contacts with visitors, nurses and physicians.

1. a. Visiting hours for ward patients have been limited to five hours a week. The visitors are masked and gowned and by means of rope barriers are separated from the beds in each public ward so that they are least liable to contaminate the mothers or their bed units. It is admittedly a concession to popular opinion that visiting hours are as many as they are and are countenanced at all, even under these conditions.

b. Nurses are required to wear masks and gowns at all times while caring for infants in the nursery. Routine cultures are made of material from the throats of nurses who are about to come on duty in the nurseries. If dangerous organisms are found, the nurse is relieved of her duties. Complete studies are made to determine whether her infection is in any way a menace to the infants who have been under her care.

If so, the nursery affected is quarantined, and the infants in it are treated as indicated by the studies made.

c. A physician must wear mask, gown and sterile gloves on entrance to any nursery for newborn infants. He must examine the infant in the special examining room attached to every unit unless there is an emergency which takes him into the nursery proper. If the physician passes from one unit to another, he must change his mask, gown and gloves for every unit entered. House officers are assigned to individual nursery units and are not shifted unless they are ill or terminate their service in the nursery. This refinement should not be necessary if strict technic is

1. Weymuller, C. A.: Measures for the Protection of Newborn Infants, Child **5**: 215 (March) 1941.

observed. If they become ill, they are relieved of their duties and are studied to ascertain whether their illness will in any way affect the infants who have been under their care. If so, the nursery affected is quarantined, and the infants in it are treated accordingly.

d. Ward maids and cleaning women in the nurseries are subject to the same regulations as nurses and physicians and are rigidly supervised by both.

e. Every nursery unit has in its examining room complete medical equipment, so that no contamination can occur by way of stethoscopes, otoscopes or other instruments which might be brought in by the attending or house staffs.

f. All bedclothing, diapers and clothes for the infants in the nurseries are sterilized by autoclave. Each infant's supply for the day is stored in a shelf under his crib. Thus, only his own nurse comes in contact with his supplies. A further most practical refinement is the sterile packet devised by our nursing staff for the infant at bath time. This packet contains sterile cotton balls for laving the infant's eyes with normal saline solution, a sterile shirt, diaper and dress, and a sheet and blanket for the infant's bed. This is in sharp contrast with the usual practice of having a central supply room.

2. We have made our nursery units as small as our physical plant would permit. As can be seen from figure 1, each main unit consists of a room containing sixteen cribs, an adjoining but separate room for weighing and bathing, and an examining room partitioned off for the use of physicians. If we had complete freedom of action we should have the units contain 8 infants. (Although it will again be mentioned, it should be observed that each unit has a refrigerator for the storage of milk mixtures, a bottle warmer, a sterilizer and a scrub sink.) The cribs of each unit are arranged in two groups of eight and are never interchanged.

3. The measures taken to prevent the spread of infection from infant to infant through an intermediary are as follows:

a. The assignment of nurses caring for newborn infants has been changed so that one nurse cares for but 8 babies of full term and 1 premature baby. The

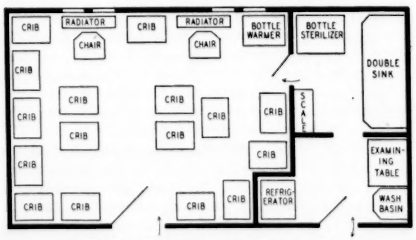

Fig. 1.—Typical nursery unit for newborn infants.

nurse is assigned for complete care of these infants; that is, she takes them to their mothers to be nursed or gives them their milk mixtures or fluids, bathes them, weighs them and cares for them in every particular. This personal, individualized service permits the nurses to know in detail the condition of the mothers and babies in their charge. If they follow the required technic, they cannot transmit any infection beyond their group, much less beyond the ward of 16 in which they function. This is one of the greatest improvements which we have made and is, we believe, unique. Until war shortages forced a change we were able to function most satisfactorily. The circumstantial breech of this

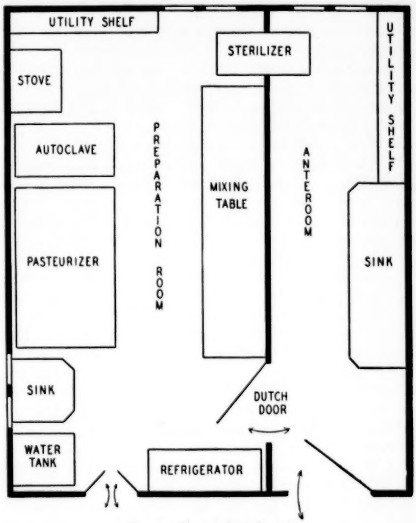

Fig. 2.—Present formula unit.

ideal setup caused us considerable difficulty which will later be described.

The formula room is in a section of the hospital entirely removed from the nurseries or sick patients. Ideally, we believe that it should adjoin the unit in the clean surgical division where sterile solutions and similar materials are prepared or, second best, perhaps the diet kitchens. The formula room is so arranged that contamination from outside the hospital or from any unit in the hospital is reduced to the minimum. All materials and utensils which enter the formula room pass through the sterilizer, which extends through the wall between it and the anteroom, or over the Dutch door (fig. 2). The sterilizer, of course, will destroy all contaminants. A special technic has been worked out to permit the use of the Dutch door and still avoid the introduction of contamination.

Once in the unit, these materials are made into milk mixtures according to formula, placed in sterile bottles, capped with sterile nipples and covered with sterile glass caps. All this is done by trained nurses in sterile gowns, masks and gloves. These nurses are carefully supervised and inspected and are relieved of duty immediately whenever they are ill. Their throats are cultured at the beginning of their term of duty in the formula room and subsequently whenever indicated. Although all these precautions are taken before and during preparation of mixtures, it is nevertheless considered that there might be contamination by air, hands or otherwise. Therefore the milk mixtures and other fluids are pasteurized at 140 to 160 F. for thirty

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minutes. Repeated cultures of mixtures so prepared have shown that they are sterile. If formulas were autoclaved after preparation in a clean formula room, the need for aseptic technic might be obviated. However, certain mixtures curdle when they are autoclaved and require buffering to counteract this.

All the bottles, nipples and utensils which return to the formula anteroom from any unit for infant or child care in the hospital, such as the nursery for newborn infants, the children's surgical ward or the children's medical ward, are washed and sterilized in the unit where they are used before they come to the anteroom. They are again cleansed and sterilized before they are delivered to the formula room proper.

When milk mixtures have been completely prepared, the bottles are passed through a window in the formula room and are then transported in a closed cart, used exclusively for sterile milk mixtures, to the unit where they are to be used. Each unit has its own refrigerator to receive these mixtures and materials.

d. A common utility room is not needed, because each unit has its bottle warmer, its sterilizer and scrub sink, and plenty of utensils. As all utensils are cleansed and sterilized before they leave the unit, contamination cannot be spread to other nursery units or to the formula room.

e. Proper isolation units are provided both for observation of suspected cases and for infants who are known to have transmissible diseases. The suspect nursery unit of eight or more cribs is located across the hall from the clean nurseries and is completely separated from them. It is equipped in the same way as are the larger nurseries (fig. 3). Infants who are suspected of harboring transmissible diseases are observed there

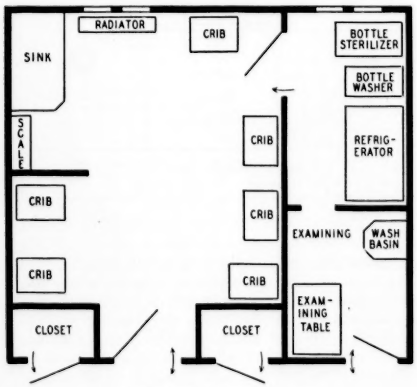

Fig. 3.—Suspect nursery unit.

until discharged from the hospital. This includes infants who have had numerous or loose stools. The nursing and medical personnel and the equipment of the intermediary isolation unit are complete and independent of all uncontaminated units. If infants prove to have true diarrhea, epidemic or not, they are transferred to the pediatric department ward, where rigid isolation technic is observed

Therefore, if any infant in any unit has infection the following steps are taken:

1. The affected infant is immediately isolated. For infections of any importance complete isolation is instituted at once.

Comparison of Three Routines for Care of the Skin of Newborn Infants

Method	Total Cases	Cases of Pyoderma	Incidence per Thousand Cases
A. 1930-1940	10,534	130	12.3%
1. Isolation 2. Closure of nursery 3. Local treatment (various)			
B. 1940-1942	3,064	35	11.0%
1. Inunction with 2% ung. hydr. am. 2. Isolation 3. Reinunction of contacts with 2% ung. hydr. am. 4. Closure of nursery 5. Local treatment with 5% sulfathiazole ung. (emulsion base)			
C. 1942-1946	8,727	8	0.9%
1. Inunction with 15 Gm. 5% sulfathiazole ung. (emulsion base) 2. Isolation 3. Reinunction of contacts with 5% ung. sulfathiazole 4. Closure of nursery 5. Local treatment with 5% ung. sulfathiazole			

2. The unit from which this infant came is closed to further admissions until the hospital physicians feel certain that new cases will not develop.

3. The nursing and medical personnel of the unit involved observe the most meticular aseptic technic and carefully observe every exposed infant for the development of symptoms.

4. When a contaminated nursery has been emptied, it is thoroughly washed with soap and water and aired; it is not reopened for twenty-four hours after cleansing. All cribs and mattresses are specially treated.

PROPHYLAXIS OF PUSTULAR CUTANEOUS INFECTIONS

As we reported[2] in May of 1945, we had by that time anointed 3,205 infants just after birth with 15 Gm. of 5 per cent sulfathiazole in an emulsion ointment base, in an attempt to prevent pustular infection. If the infants were exposed, we reanointed them with this preparation, closed the nursery and treated any infant having pyoderma by evacuating pustules under 70 per cent alcohol; we then made frequent local applications of 5 per cent sulfathiazole water-soluble ointment.

The results have been excellent. From August 1942 to May 1946 there have been only 8 sporadic cases of pyoderma in 8,727 infants, without spread to neighboring infants in the same nursery or to those in adjacent nurseries. The blood sulfathiazole levels, blood counts and urinalyses were not significantly altered in a preliminary study.[1] Of the 8,727 infants who had had prophylactic inunction with 5 per cent sulfathiazole ointment in an emulsion base, 126 were readmitted for serious illnesses which required full dosages of sulfonamide compounds. One hundred and three were admitted once for heavy treatment with sulfonamide compounds; 15 infants had two such admissions; 6 had three; 1 infant had four, and 1 had five such admissions. In none of the 126 infants was there any evidence of sensitization to sulfonamide compounds.

2. Weymuller, C. A., and Ittner, E. J.: Sulfathiazole Ointment for Prevention and Treatment of Pyodermas of Newborn Infants, Am. J. Dis. Child. **69**: 283 (May) 1945.

SUMMARY

Section I describes the following measures employed since May 1937 at Long Island College Hospital for the protection of newborn infants:

1. Small nursery units were substituted for the customary large nurseries.

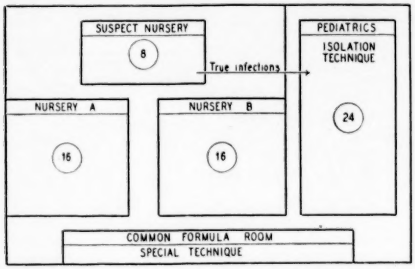

Fig. 4.—Setup in Long Island College Hospital for care of newborn infants. Because of a wartime shortage of nurses, nurses from A and B were caring for infants in suspect nursery.

2. All facilities required for care of newborn infants were duplicated in each nursery unit, a measure which eliminated the common utility room, the common linen store room, the common drug closet and the instruments used in common by the pediatricians and nurses as factors in spreading infection.

3. Nursing personnel was assigned to each nursery unit, so that absolute control of this element is secure. A common formula room was so constructed and managed that separate formula rooms for each nursery unit are unnecessary.

A brief report of the results of prophylaxis against pustular cutaneous infections is included.

II. Practical Experiences with Prophylaxis of Diarrhea: Management of a Diarrhea Epidemic

Following is a brief report of our practical experience with the measures instituted for the prophylaxis of diarrhea of the newborn and how we managed an epidemic of diarrhea which followed a compulsory failure to observe them. It is hoped that with the help of the diagrams presented the important points will impress themselves on the reader and so be of use in the protection of newborn infants from diarrhea.

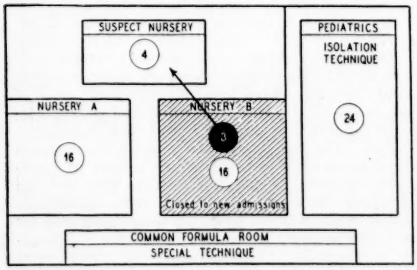

Fig. 5.—Situation on first day of diarrhea outbreak, Oct. 23, 1945.

First of all, we evolved our prophylactic program because a potentially tragic experience made us realize how vulnerable we were. From 1929 to 1937 we did not have any trouble from diarrhea, with all the gates open. Then a mother who had had Flexner dysentery at her sixth month of pregnancy (unreported to her physician) was delivered at Long Island College Hospital. On the seventh day her infant had many loose stools, was isolated and was successfully treated. Had that infant really had Flexner dysentery, which it fortunately did not have, the approximate contacts were 40 infants in four adjacent, unprotected nurseries, 25 patients in the children's surgical ward, 25 patients in the children's medical ward, the private patients and the entire medical nursing and service personnel. A good

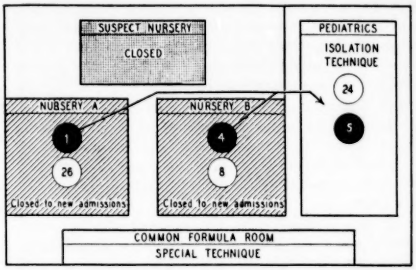

Fig. 6.—Diarrhea outbreak, six days after inception (October 29).

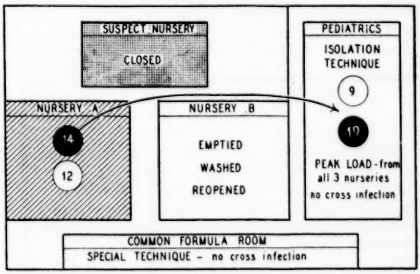

Fig. 7.—Diarrhea outbreak, seven to ten days after inception (October 30 to November 2).

many more than 90 persons were in jeopardy, because we had a hospital setup like many another, which was entirely unsound for the management of enteric infection, whether specific or not. We escaped in this instance, but resolved not to tolerate the continuance of conditions which could repeat this hair-raising experience. Accordingly, our set-up was altered in the manner described in section I, at low cost and in an old hospital of rigid design.

We got along beautifully and soundly from May 1937 to October 1945 with our prophylactic technic. For months during the last years of the war we were so short of nurses that our technic was necessarily violated, and these errors caught up with us on October 23, 1945.

The day before the outbreak there were 40 infants in three of the nurseries: 16 in nursery A, 16 in B

and 8 in the suspect nursery (fig. 4). None had diarrhea. All these infants and those in the twenty-four bed pediatric ward received formulas made in the common formula room under special technic.

Unfortunately, wartime shortages required the nurses in A and B nurseries to care for infants in the suspect nursery, thus converting the setup into a single nursery completely inadequate to protect against diarrhea, whether specific or nonspecific.

On the first day of what proved to be an epidemic (fig. 5) 3 infants who had moderately loose stools were transferred to the suspect nursery, and B nursery was closed to new admissions. Within six days (fig. 6) 3 more cases had developed in B nursery and 1 case in A nursery. Obviously, therefore, the personnel from A nursery had carried the contamination from the suspect nursery to complete the circle. Meanwhile, of course, the suspect nursery had been closed, since all

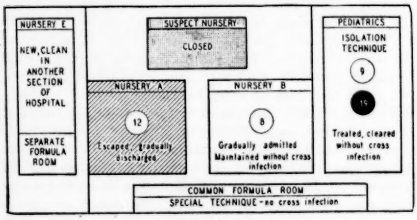

Fig. 8.—Progress of diarrhea outbreak.

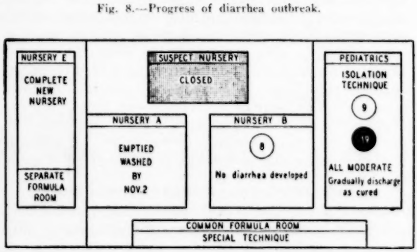

Fig. 9.—Diarrhea outbreak, eleventh day after inception (November 2).

infants with diarrhea had been transferred to the pediatric wards under strict isolation technic. By the sixth day of the epidemic a total of 5 infants had contracted diarrhea in a moderately severe form and had been transferred to the pediatric wards.

It is to be noted that a common formula room was used for all units for infant care and that there were uncontaminated infants in the pediatric wards, in rooms adjacent to those in which there were patients with diarrhea. Even so, with enteric precautions, cross infections did not occur in the pediatric unit, or in any other unit of our hospital.

Immediately after the diarrhea epidemic began, the unit system was rigidly reestablished. Attending staff, house staff and nursing and service personnel were assigned either to clean or to contaminated units, never to both, and were not exchanged. Obviously, many institutions could not mobilize so large a personnel, and if technic is rigidly observed, this should not be necessary.

SECOND STAGE OF EPIDEMIC

From the seventh to the tenth day after onset, 14 more infants had acquired diarrhea and were transferred to the pediatric ward (fig. 7). The 12 remaining infants in the contaminated nursery A escaped entirely and were discharged at the usual time.

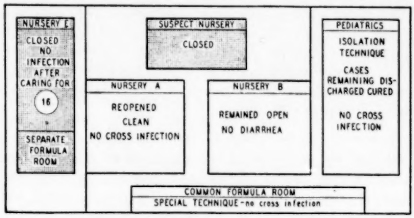

Fig. 10.—Conditions during final days of diarrhea epidemic.

By the seventh day, the problem of the care of uncontaminated newly born infants had to be met. Accordingly, permission was given to clean up nursery B, staff it with an entirely new and independent crew and open it for admissions. Eight infants were gradually admitted into this unit and were maintained without cross infection until their customary day of discharge. It should be noted again that the formula room which serviced the reopened nursery B also served contaminated nursery A, the 19 infants with diarrhea on the pediatric wards as well as the uncontaminated infants on the pediatric ward. This was done without cross infection; a real proof that this system is a good sound one, if similarly administered.

THIRD STAGE OF EPIDEMIC

On the eleventh day of the epidemic it was recommended by the New York Health Department (fig. 8) that a new and independent nursery, complete with formula room, be set up in another portion of the hospital. This nursery cared for 16 uncontaminated infants during the last days of the epidemic, without cross infection, just as was true of clean nursery B. However, nursery B, though just as effective, was adjacent to the contaminated nursery and was serviced by the common formula room. The point is worth reiteration

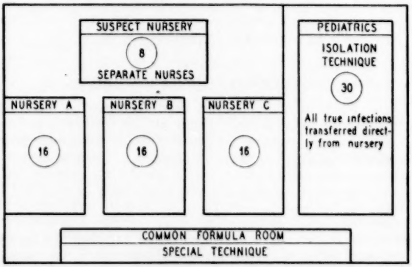

Fig. 11.—Present setup at Long Island College Hospital.

that if facilities for the establishment of a new nursery complete with formula room cannot be produced, completely effective protection may still be accomplished by capable administrators, as we have hereby proved (fig. 9).

FOURTH STAGE OF EPIDEMIC

As was noted, new nursery E cared for and discharged 16 infants without disturbance; nursery B, adjacent to contaminated nurseries, remained open successfully throughout the epidemic to receive uncontaminated newborn infants. Soon nursery A was reopened to new admissions without cross infection. The 19 affected infants in the pediatric wards recovered from diarrhea. Those infants adjacent to them on the pediatric wards did not acquire cross infection (fig. 10). A common formula room was used for all infants in the hospital, sick or well, except those in nursery E, the new, independent unit.

CONCLUSION OF EPIDEMIC

From the last day of the epidemic to date we have reestablished our nurseries on a unit system (fig. 11), and if nursing shortage again forces a change our only concession can be to reduce the patient load in one clean nursery. For example, nurses of nursery B might be assigned to the care of the suspected nursery. Admittedly, contamination from other nurseries which has been brought to the suspect nursery might thus be carried to nursery B. However, with proper technic it will stop there. Thereby the remaining nurseries will be protected and at least one completely clean unit will be available.

SUMMARY

Because of nursing shortages the effective prophylactic technic employed from 1937 to 1944 could not be observed. An outbreak of diarrhea in October 1945 passed through three nurseries which error had converted into one nursery and affected 19 infants. These infants all recovered from the diarrhea.

The progress from unit to unit is portrayed in the diagrams.

It was proved (1) that a common formula room for all hospitalized infants, sick or well, may be successfully used without cross infection in the hands of meticulously careful administrators; (2) that a clean nursery may be operated immediately adjacent to a unit contaminated with diarrhea without cross infection, if our technic is meticulously observed, and (3) that, as is generally conceded, an entirely new unit, complete with formula room and independent personnel, may be operated without cross infection. These measures have proved effective, practical of operation and at a cost level within the means of all who might be entrusted with such an important responsibility.

ABSTRACT OF DISCUSSION

Dr. Francis Scott Smyth, San Francisco: I think Dr. Weymuller's paper is most appropriate for those who are contemplating new building programs. Pediatricians must be on constant vigilance to keep up technics. Modern obstetrics demands that mothers come to the hospital for delivery, but I have a growing suspicion that the newly born infant would do better in the home. It seems to me that in many places the newly born infant is treated as on an assembly line, and it has been my observation that if one wishes to detect the nursing shortage, for example, the place to detect it is in the nursery. I should like to have had Dr. Weymuller discuss the use of propylene glycol or aerosol treatment. We are in the process of designing, we hope, a fine nursery for the future. At present I envy him with his apparent extra space where he can shift from nursery to nursery without any difficulty. The hospitals have been so crowded here in this city that I think we too are at the present time on rather thin ice when it comes to the danger of epidemic infection.

MODERN TREATMENT OF CHRONIC SINUSITIS

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By modern treatment of chronic sinusitis is meant the current treatment, whether it is old or new. To discover the source of the current treatment it is necessary to examine not only the work of the present generation but that of generations of the past.

In reviewing the literature, it was found that most of the present methods of arriving at a diagnosis of chronic sinusitis and the fundamentals of surgical procedures were in Dr. Hajek's book of 1898. In the foreword of the last edition, published in 1926, Heitger and Hansel, the translators, stated: "The first edition, published in 1898, placed anatomy, pathology and therapeusis of suppurative affections of the nasal accessory sinuses, for the first time on a solid foundation. In subsequent editions, a most significant and impressive feature is that Dr. Hajek found it unnecessary to retract or modify a single basic principle originally presented."

Since Hajek's time there have been improvements in surgical and in diagnostic procedures, but the greatest advance has been a better understanding of the physiology of the nasal mucous membrane. Having in mind what the normal nose is like, one can direct the treatment toward reestablishing this healthy state. This normal, healthy state means adequate aeration and drainage of the sinuses. To carry away foreign material, a tough mucous blanket propelled by cilia moves toward the nasopharynx. In planning treatment of chronic sinusitis, it is of great importance not to do anything which might permanently injure this mechanism of nasal cleansing. Medicaments must not have irritating chemicals. The p_H must be compatible with ciliary action. Structures necessary for humidifying and directing air currents should not be removed by surgical treatment, which must be planned in such a way that it does not destroy the glands so necessary for the maintenance of the mucous blanket protecting the cilia. An exception to this is when the membrane is so diseased it cannot recover.

AID FROM THE INTERNIST AND THE PEDIATRICIAN

The internist can help by carefully eliminating causes of the symptoms of chronic sinusitis, other than local conditions in the nose. His history and physical examination may show that a person has glandular dyscrasia and is apt to have disturbances of the mucous membrane. A dietary deficiency, including deficiency of vitamins and minerals, or inability to handle certain foods may cause a reflex upset in the nose. Certain habits, such as late hours, smoking, alcohol, excessive eating and worry, may produce congestion of the nasal membranes with the attendant lowering of resistance and secondary infection of the sinuses. The internist should be critical of the rhinologist's medication for the nose, as it may cause a chronic congestion and secondary effects.

The pediatrician can help the rhinologist by eliminating the factor of allergy and the overuse of nasal medication. The dietary problem is as important as in the adult, but this has usually been disposed of in the pediatrician's routine care of the child. Not infrequently the correction of some of these conditions by the internist or the pediatrician will clear up what is simulating a chronic sinusitis.

Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

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Having received this help from the physicians who refer the patients to us, we rhinologists then have a definite obligation to them. We must report to the physicians the involvement of the sinuses, the treatment anticipated and the prognosis. If the condition is serious enough to warrant the consultation, then we must make every effort to clear up the complaint.

DECISION AS TO TREATMENT

The rhinologist, like the tracker of wild animals, is trained to observe the signs which have significance in leading to the "prey"—in this case, to the chronic sinusitis. Often there is a history of excessive blowing of the nose and overmedication. If so, the patient cannot be properly evaluated until he has gone for a period of about four days without nose blowing and nasal medication. After about four days, the nasal mucous membranes will have a chance to return to normal as much as is possible and a better evaluation can be made. Since the patient is usually miserable because of nasal congestion and accumulation, a mild sedation may be used at bedtime. By the end of four days, the congestion is less and the secretion has been retrained to go posteriorly, the normal direction.

A roentgenogram is ordered at the time of the first visit, and at the second visit a rather complete evaluation of the chronic sinusitis can be made. The roentgenograms must be taken in the proper positions to determine the degree of disease in all sinuses. Complete roentgenologic interpretation is sometimes lacking until involved sinuses are irrigated. With these data at hand, usually the treatment can be outlined. The roentgenograms alone may indicate the need for surgical intervention; for instance, when they disclose chronic frontal sinusitis with osteomyelitis.

Inspection of the nose includes the search for any obstruction which would prevent proper flow of air or interfere with drainage of the sinuses. Obstructions may be from a deviated septum, a large turbinate or polyps. Correction of these may be necessary for reestablishing normal flow of air and drainage. Inspection is continued, an attempt being made to follow leads, as indicated by inflamed areas of mucous membrane and pus, to sinuses which are involved. The roentgenogram helps in looking for these leads. The nasopharyngoscope and the nasopharyngeal mirror, if used frequently, are good aids in noting anatomic and pathologic abnormalities. Repeated examinations are often necessary to discover pus coming from the sinuses draining into the middle meatus.

Bacteriologic and cytologic studies are made from the nasal passage as well as for the sinus cavities. The finding of eosinophils, especially if they are associated with swelling of the mucous membrane and polyps, means that the underlying allergy must be treated. Not infrequently, control of allergy means a clearing up of the chronic sinusitis because adequate drainage and aeration are reestablished. Diagnostic washings should always be done in the maxillary and sphenoid sinuses. An attempt should be made to wash the frontal sinus, if it appears to be infected.

NONSURGICAL TREATMENT

The treatment of chronic sinusitis in children is usually nonsurgical. Removal of infected tonsils and adenoids may eliminate frequent infections which keep up the sinusitis. When pus stagnates along the floor of the nose, removal of it by spot suction will permit the reestablishment of movement of the mucous blanket and facilitate drainage from the sinuses. Spot suction in the upper recess of the middle meatus has a similar beneficial effect on the ethmoidal cells.

Gentle nasal irrigation, with warm solution of sodium chloride and sodium bicarbonate, after general shrinkage removes excess mucus and pus and again permits a more efficient mucous blanket to function. This is of great value, especially for combined allergy and chronic sinusitis in children. Irrigation of the maxillary sinus by way of the normal ostium can frequently be accomplished in children. This should be done whenever possible, as it speeds up the clearing of the infection.

Local use of sulfonamide compounds and of penicillin is of questionable value for the chronic infection but of value for the acute exacerbation when the new pathogen is sensitive to the chemotherapeutic agent. The same can be said for administration of sulfonamide drugs by mouth and of penicillin hypodermically. Local use of a sulfonamide compound is of much value when it is lightly applied to a sinus cavity after removal of the lining in that it keeps down infection for a short time while the granulations are starting. Penicillin given hypodermically before and after radical operation on the sinuses is also a valuable aid in keeping down postoperative secondary infection.

Bacterial filtrates in the nose and sinuses are not as enthusiastically used as in the past, but there are times when they seem to be of value. In trying to clear up a chronic infection in the sphenoid sinus without surgical intervention when irrigations have been unsuccessful, it is worth while to instill an autogenous bacterial filtrate. Vaccines have apparently fallen into disrepute; in my experience, they have not been of value. Roentgenologic treatment of chronic sinusitis has proved of no help.

SURGICAL TREATMENT

Surgical treatment is directed toward improving ventilation and drainage of the sinuses and removal of diseased tissue. In examination of sinus linings removed in past years, rarely is chronically infected tissue found which is not capable of becoming a useful membrane if present knowledge of treatment is applied. The majority of the specimens show eosinophils, plasma cells and edema; they rarely show degenerative changes to the extent of being irreversible. This story of the past should be borne in mind while the present surgical procedures are considered.

Nasal Cavity.—A submucous resection of the septum should be done if it obstructs. Polyps should be removed, as little damage as possible being done to normal structures. Refraction of the middle turbinate should be done if the middle meatus has inadequate space. Crushing of the middle turbinate may be necessary if it is enlarged because of a turbinal cell.

Maxillary Sinus.—After repeated irrigations of the maxillary sinus, whether by the natural ostium or by puncture, if the infection continues an adequate window opening is made in the inferior meatus. The normal ostium, which may have been partly blocked by edematous mucous membrane, now has a chance to return

to normal and function once more. Too large an opening may cause changes in the sinus lining, according to Hilding's observations, which are not conducive to a healthy state. If there is a polypoid lining, there is a greater chance that the window opening will not suffice and that the lining will have to be removed. This is done if suppuration continues.

A maxillary sinusitis of dental origin which has foul pus usually necessitates removal of the lining. Several irrigations may temporarily clear it up but, with a new cold, it usually forms the foul pus again. The infected bone at the site of the old apical abscess seems to keep up the infection of the lining. Curetting out the infected bone and closure of a fistula are necessary.

Ethmoid Sinus.—Infection in the ethmoidal sinuses usually clears up without an ethmoidectomy if all infection is eliminated in the maxillary and frontal sinuses. However, if a careful follow-up is not possible after the maxillary sinus has been cleaned, it is often better to do an ethmoidectomy. Care should be taken to leave the middle turbinate intact.

Sphenoid Sinus.—Chronic infection in the sphenoid sinus usually clears with conservative treatment, but if repeated washings fail, then there should be conservative surgical intervention. The normal ostium may be enlarged or an opening made adjacent to the normal ostium which will permit the thickened mucous membrane that may be interfering with drainage to return to normal. Removal of the anterior wall and floor and stripping out the lining of the sphenoid are rarely necessary.

Frontal Sinus.—The frontal sinus usually responds to repeated irrigations. It may be necessary to remove one or two anterior ethmoidal cells, which make up the nasofrontal duct, for easy entry into the frontal sinus. This converts the duct into a frontal ostium. Even though the irrigator passes into the frontal sinus, there may be polypoid mucous membrane which is pushed aside only to block the ostium again after the irrigator is removed. It is necessary to create a clean, open middle meatus if the frontal sinus is to be given a proper chance to clear up. If conservative treatment does not eliminate suppuration, some form of the Lynch operation is done. If infection persists or there is osteomyelitis of the anterior plate, more radical surgical treatment may be necessary.

SUMMARY

A more adequate knowledge of the physiology of the nose and sinuses permits an approach to treatment with a definte goal in mind, that is, restoration of the nose to normal functioning and freeing the sinuses from disease.

The internist and the pediatrician can help the rhinologist by eliminating and treating conditions which contribute to chronic sinusitis.

Modern nonsurgical treatment includes so much more than in past years that much less surgical treatment of the sinuses is now necessary.

The recuperative powers of the mucous membrane of the sinuses are greater than was once supposed; hence its removal is less frequently done.

Careful planning of the treatment, whether it be nonsurgical or surgical, will result in many more cures of chronic sinusitis.

ABSTRACT OF DISCUSSION

DR. LEWIS F. MORRISON, San Francisco: I do not come up here with as much pleasure as I did yesterday. I read the paper twice, and I did not quite believe it, for the reason that it is no example of the man's ability. It was a poor subject. Perhaps he was persuaded to take it against his inclination. He is a man of great ability; he has done a great deal, and he has much to offer us. It is a good summary, but there is not time now to go into the various small points, and I do not think that he would welcome my picking out one or two small points to discuss. The only thing which I want to bring forward to you is that this is no representation of what Dr. Hunnicutt really is, and the experimental work which he has done and the hours which he has spent in the laboratory. If you can get him off in a corner and talk to him, you will really find out what he is.

DR. ROBERT C. MCNAUGHT, San Francisco: The title of the paper implies chronic sinus infection, which is now recognized as a comparatively rare condition in pure form. Most of what is called chronic sinusitis is not chronic infection but subacute infection prolonged in a person whose membranes react allergically. Its treatment by the so-called conservative methods is as surely doomed to failure as by the radical methods until something more basic is known about control of the allergic reaction. Dr. Hunnicutt attempted to cover only treatment. Mention was made of diagnostic methods, but the point of my remarks is that these should be emphasized because chronic sinusitis, if pure infection in the sinuses is meant, is a rare condition, and that most of the time should be spent on an accurate differential diagnosis so that the part which allergic reaction in the patient plays in the chronicity of his particular symptoms may be known. This diagnosis includes a careful history and, more important, a proper interpretation of that history. Roentgenologic examination, as mentioned by Dr. Hunnicutt, is only of accessory value. Bacteriologic studies are practically of no value. The diagnosis should be based on frequent and repeated lavage of the antrum, with study of the secretions obtained—microscopic study—for the presence of eosinophils or polymorphonuclear cells. At the time of the puncture note should be taken of the capacity of the sinus, which provides information as to the thickness of its lining. It also provides information about the patency of the ostium. All such information is necessary for planning of the treatment to be employed. Dr. Hunnicutt did not mention the Proetz method of irrigation, which I think is of distinct value in children. I am a little surprised, in view of the current talk about p_H, that he did mention the use of sodium bicarbonate in a nasal douche. The p_H, of course, brings up the question of nose drops. Nose drops have no place in treatment of any chronic nasal condition, whether it be chronic infection of the sinuses or one of the allergic states, because any transient benefits which may result are far outweighed in the long run by the secondary effects. Therefore p_H does not come into the question of chronic disease of the sinuses. As brought out by Dr. Hunnicutt, the modern trend in the treatment of chronic sinusitis is toward conservation of structure and function. He does not advocate conservatism in the sense of nonintervention.

DR. LELAND HUNNICUTT, Pasadena, Calif.: I appreciate both of the discussions. In answer to Dr. Morrison's remarks, the subject assigned called for a presentation of the modern treatment of chronic sinusitis. An outline was prepared based on that which my colleagues and I use at the Los Angeles General Hospital for teaching the residents and as a guide for the teaching staff. Dr. McNaught criticized the use of sodium chloride and sodium bicarbonate for nasal irrigation because of improper p_H. This solution is used as an office treatment when it is desirable to get rid of thick secretion in order to make the nose more comfortable and allow the mucous membrane to function better. This is not done as a daily procedure. I still have great respect for the proper p_H of the solutions to be used in the nose.

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OTIC COMPLICATIONS OF STREPTOMYCIN THERAPY

A Preliminary Report

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Neurotoxic symptoms involving the vestibular and auditory systems may occur following streptomycin therapy. Hinshaw and Feldman [1] mentioned 1 case of transient deafness and 3 cases of apparent disturbances of vestibular function when large doses of streptomycin were administered over long periods of time. Molitor and his co-workers [2] found signs of pronounced disturbances of vestibular function in dogs after extremely large doses of the drug (ten to twenty times the usual human dose per kilogram of body weight). Mushett and Martland [3] did not observe pathologic changes in the central nervous systems of these dogs. The first specialized report of aural complications in human beings has been made by Brown and Hinshaw.[4]

Our series of 81 cases from a large military hospital consists of patients who received streptomycin during the period November 1945 to August 1946. During this same period approximately 80 other patients received the drug in this hospital. The particular patients in our group were used because of their availability at the time of our visits to the hospital. However, all patients on streptomycin therapy who complained of dizziness, tinnitus or impaired hearing were included. For this reason the patients showing complications can be considered the total number of such patients out of approximately 160 patients treated with streptomycin.

Patients with known disease of the ear were excluded from our statistics. Among these there were 2 cases of acute otitis media, 1 case of chronic otitis media, 1 case of brain abscess secondary to mastoiditis and 1 case of otosclerosis. There were 80 men and 1 woman; all were healthy adults before their present illness. Their ages ranged from 19 to 51; 64 per cent were in the age 20 to 29 group and 29.2 per cent were from 30 to 59. The diseases for which treatment was being given were osteomyelitis (71.6 per cent), and urinary infections (16.3 per cent); there was also 1 case of each of the following conditions: infection of soft parts, infected burns, subacute bacterial endocarditis, undulant fever and osteomyelitis and urinary infection in the same patient. The dosage was usually 3 Gm. streptomycin (3 million units) a day given intramuscularly 0.5 Gm. every four hours. The total dosage was small compared to that necessary for the treatment of tuberculosis. Nineteen patients received 20 to 29 Gm.; 16, 10 to 19 Gm.; 15, 30 to 39 Gm.; 14, 40 to 49 Gm.; 4, less than 10 Gm., and 1 a total of 141 Gm. Twelve patients were given more than one course.

This investigation was supported by a grant from Merck & Co., Inc.
From the Department of Otolaryngology, Columbia University College of Physicians and Surgeons, and the streptomycin service of the Halloran General Hospital, Capt. Edwin C. Pulaski, Medical Corps, Army of the United States, Director.

1. Hinshaw, H. C., and Feldman, W. H.: Streptomycin in the Treatment of Clinical Tuberculosis: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 313, 1945.

2. Molitor, H.; Graessle, O. E.; Kuna, S.; Mushett, C. W., and Silber, R. H.: Some Toxicological and Pharmacological Properties of Streptomycin, J. Pharmacol. & Exper. Therap. **86**: 151, 1946.

3. Mushett, C. W., and Martland, H. S.: Pathologic Changes Resulting from the Administration of Streptomycin, Arch. Path., to be published.

4. Brown, H. A., and Hinshaw, H. C.: Toxic Reaction of Streptomycin on the Eighth Nerve Apparatus, Proc. Staff Meet., Mayo Clin. **21**: 347, 1946.

The interval between the cessation of therapy and our initial examination varied from one day to six months. Incidentally, all patients had received penicillin therapy before treatment with streptomycin was started. Only 15 of the patients in the series were examined both before and after streptomycin therapy. Their initial poststreptomycin examination was made within one week after discontinuation of the treatment.

The initial examination consisted of an otic history, otoscopic examination, audiogram for air conduction and Kobrak caloric test, in the order named. For the Kobrak caloric test, the head was turned to the side, the external canal straightened by tension on the auricle and a medicine dropper of ice water at approximately 7 C. instilled. The head was turned on the other side after about five seconds to allow the water to escape, and then another dropperful was instilled and allowed to escape. The latency of onset of nystagmus was computed from the time of instillation of the first dropperful of water. If there was no response to this stimulus, several more dropperfuls were used. If there was still no response, ice water was run in with an irrigating can for five minutes or until a response was noted. A latency of more than forty seconds was arbitrarily designated as "delayed." This test is not quantitative; it merely detects labyrinths with serious hypofunction. It is planned to do accurate quantitative tests according to the technic of Fitzgerald, Cawthorne and Hallpike [5] in the future.

TABLE 1.—*Results of Examination of Eighty-One Patients After Streptomycin Therapy at Halloran General Hospital*

Audiometric			Vestibular		
	No.	%		No	%
Normal	26	32.1	Normal	65	80.2
Low tone loss (256 and 512)	1	1.2	Delay	13	16.0
High tone loss (2,896, 4,096 and 8,192)	42	51.8	Absent *	3	3.7
High and low tone loss	11	13.6			
All tone loss *	1	1.2			

* These figures probably represent all such cases out of the entire group of approximately 160 patients being treated with streptomycin at the same hospital during our study. All the other losses shown in this table are probably not due to streptomycin therapy. Audiometric losses are those commonly found in wounded military personnel. The delayed vestibular response occasionally occurs in normal persons.

The majority of these patients were confined to bed and had to be examined in the wards. It was impossible to control the outside noises under these conditions. Most noticeable was low tone interference due to the almost constant motor noises from airplanes, military vehicles and grass cutters. The overall ambient noise level varied considerably from time to time. The range was 35 to 65 decibels, the average close to 45 decibels. The 15 patients examined before as well as after streptomycin therapy were examined in the audiometric room of the Ear, Nose and Throat clinic. This room is not soundproofed and is exposed to much the same outside interference as the wards. For this reason a threshold change below a level of 30 decibels was considered unreliable.

Summaries of the results of these examinations are shown in table 1. Of 81 patients examined after streptomycin therapy, 53 (65 per cent) showed a high tone loss. Of these, 11 (13.6 per cent) showed a low

5. Fitzgerald, G.; Cawthorne, T. E., and Hallpike, C. S.: Studies in Human Vestibular Function: I. Observations on the Directional Preponderance of Caloric Nystagmus Resulting from Cerebral Lesions, Brain **65**: 115, 1942.

tone loss in addition to the high tone loss. None of the low tone losses were greater than 35 decibels, and losses of this magnitude are always subject to question unless the tests have been performed in a soundproofed room. The high tone losses ranged from 30 to 100 decibels in the 2,896, 4,096 and 8,192 frequencies, and we believe they were due to acoustic trauma. Hoople has found similar losses in 1,000 wounded military personnel.[6] Many patients showing appreciable high tone loss gave a history of shell burst nearby. These inferences are supported by the fact that the 15 patients examined before streptomycin therapy also showed similar high tone losses (12, or 80 per cent, showed high

None of the 3 patients lacking vestibular response to ice water was examined before streptomycin therapy. The observations in these patients are summarized in table 2. The vertigo in these patients reached a peak during or shortly after therapy and has shown a steady decrease ever since. All 3 are at present up and around, and the vertigo is not in itself incapacitating. Two of these patients had a persistently negative and 1 a persistently positive Romberg sign. Two of these patients have shown signs of recovery of vestibular response. One began to show recovery two months after the cessation of therapy; two weeks later responses to caloric tests and postrotational nystagmus

TABLE 2.—*Patients Showing Disturbances of Vestibular Function Following Streptomycin Therapy at Halloran General Hospital*

		Streptomycin Therapy				Vestibular Examination							
Case	Diagnosis	Days	Total Amount Gm.	Mfgr. and Lot No.	Last Day	Date	Spont. Nyst.	Romberg	Ice Water *	Water 30 C.	Water 44 C.	Rotation	Comment
2	Infected abdominal wound	10	30.0	Pfizer 461	5/ 5/46	6/19/46	0	Falls R	No resp. 5 min.	Not done	Not done	Not done	Audiogram: loss at 4,096 and 8,192
		3	9.0	Merck 398	6/13/46	8/ 8/46	0	Falls R	No resp. 5 min.	Not done	Not done	Not done	
						8/20/46	1° R	Falls R	Not done	Not done	Nyst. 1 min.	10 × 20 sec. nyst. 10 sec.	
						9/ 3/46	0	Falls R	Not done	Nyst. 40 sec. dur. 2 min.	Nyst. 40 sec. dur. 2 min.	10 × 10 sec. nyst. 10 sec.	
3	Peritonitis	14	51.0	Not known	7/ 6/46	8/20/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	Audiogram: normal
						8/28/46	0	Normal	No resp. 5 min.	No resp. 5 min.	No resp. 5 min.	10 × 10 sec.; no resp.	
						9/ 9/46	0	Normal	3 min. 1° nyst.	Not done	Not done	Not done	
4	Subacute bacterial endocarditis	18	58.5	Pfizer 461	5/24/46	5/29/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	Audiogram: normal
		4	11.0	Merck 398	5/28/46	8/ 8/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	
						8/20/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	
						8/28/46	0	Normal	No resp. 5 min.	No resp. 5 min.	No resp. 5 min.	No resp. 5 min.	

* All caloric stimulation was bilateral.

TABLE 3.—*Summaries of Audiograms in Case One*

	Right						Left						
Date	256	512	1,024	2,048	4,096	8,192	256	512	1,024	2,048	4,096	8,192	Notes
Air Conduction													
7/19/46	15	15	10	10	15	35	25	15	15	10	20	40	Prestreptomycin
7/31/46	50	45	40	50	60	70	40	40	50	55	65	70	1st poststreptomycin
8/ 8/46	50	55	65	70	95	80	50	50	60	60	70	75	2d poststreptomycin
8/20/46	20	20	40	40	65	65	30	45	50	65	55	75	3d poststreptomycin
Bone Conduction													
8/20/46	20	50 (?)	30	45	55	↓	40	45	50	50	55	↓	Poststreptomycin

tone loss before the drug was given). One patient showed pronounced loss for all tones after administration of the drug. This was undoubtedly due to the streptomycin therapy, because his prestreptomycin audiogram showed only a slight high tone loss at a frequency of 8,192.

Caloric stimulation after streptomycin therapy revealed a normal response in 65 (80.2 per cent) patients. There was a delay in one or both sides in 13 (16.0 per cent). In 3 (3.7 per cent) there was absence of nystagmus after irrigation for five minutes with ice water. The significance of delay is difficult to evaluate with the test employed. Of the 15 patients examined before and after therapy 1 showed delay before and the same patient as well as 1 other showed delay after therapy. There is always some question as to whether a slightly subnormal response is significant.

6. Hoople, G.: Tr. Am. Otol. Soc., 1946, to be published.

were nearly normal. The other showed a first degree nystagmus after three minutes of irrigation with ice water two months after the streptomycin therapy was discontinued.

It should be reemphasized that the 4 patients who showed definite toxicity as a result of streptomycin therapy are probably all there were in the entire group of approximately 160 patients who were being treated with the drug during the same period in the Halloran General Hospital. Thus these cases would constitute less than 3 per cent of our series. Three of these patients complained of vertigo spontaneously before examination. In addition, 2 other patients complained of dizziness. One of these had received only 12 Gm. of streptomycin, and he did not complain until four days after the cessation of therapy. This was the day he read a newspaper article on the subject. The only observation in this patient was a high tone loss of

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40 decibels at a frequency of 8,192. He had a normal response to the Kobrak caloric test. The other patient had had dizziness on numerous occasions during febrile illnesses. She had been hard of hearing since late childhood. She noticed the symptom when she sat up for the first time after the cessation of therapy. There was considerable general weakness, and her debility at the time of the examination could easily account for some dizziness. Her Romberg sign was inconclusive. Her response to the Kobrak caloric test was normal. Her audiogram showed a decided loss for all tones. There was no prestreptomycin audiogram. She was not included in the statistics for this study because of the strong probability that she had previous disease of the ear (otosclerosis).

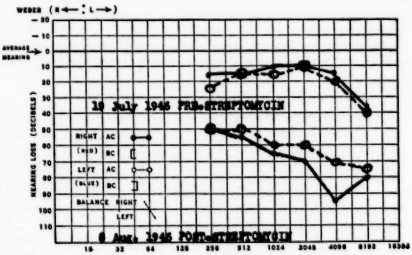
The streptomycin administered to 2 of the 3 patients lacking vestibular response bore the same manufacturer's lot number. In these 2 patients the first symptoms appeared during the first three days after the change from the drug bearing one lot number to that with another. In the third patient the manufacturer's lot number has not been identified. The patient showing impairment of hearing was treated with streptomycin from only one lot. Many other patients received streptomycin from these same lots in equal dosage without evidence of toxicity. If the cause were an excessive amount of an unknown impurity in certain lots of the drug, one would expect that more patients receiving that with the same lot number would be affected. If the toxicity were simply due to the amount of streptomycin given, one would expect to see symptoms in patients receiving the largest doses. The patient receiving the largest dose in our series (141 Gm.) had a response to the Kobrak test delayed for one and one half minutes eight days after the cessation of therapy; three months after this there was no delay. He did not have symptoms of toxicity at any time. His poststreptomycin audiogram showed nothing unusual. Certainly there must be an individual suspectibility to the toxic effects of the drug. It is an interesting fact that in both man and experimental animals otic symptoms have been caused by high potency streptomycin in lots derived from crystalline material and symptoms were not produced by some lots of the drug which were of extremely low potency.

REPORT OF CASES

CASE 1.—A man aged 24 was given streptomycin because of chronic pyelonephritis. His prestreptomycin response to the Kobrak caloric test was normal. His prestreptomycin audiogram (see the accompanying chart) was normal except for a high tone loss at 8,192 frequencies. He received 3 Gm. of the drug a day for five days. His first poststreptomycin audiogram was made three days after the cessation of therapy and showed decided loss of hearing for all tones. Two weeks later this loss had become worse. Four weeks later it had lessened to a level better than that of the first poststreptomycin audiogram. He had not complained of deafness or vertigo; however, on questioning he stated that he had noticed a slight impairment of hearing after one or two days of treatment, but that it had not been troublesome. He had also noticed a slight bilateral hissing tinnitus. He had had similar symptoms nine years before when he started antisyphilitic treatments and since then had noticed some impairment of hearing from time to time. His father had been deaf as long as the patient could remember. The patient was unintelligent and uncooperative during the examination, but the differences between the prestreptomycin and the poststreptomycin audiograms are too great to be explained by this (table 3). He had a loss of bone conduction which would indicate a nerve type deafness. He was transferred to another hospital after the audiogram of Aug. 20, 1946. The drug used was Merck lot 396.

CASE 2.—A woman aged 26 was under treatment for an infected abdominal wound. She received two courses of streptomycin therapy. The first was from April 25 to May 5, 1946 on a dosage of 3 Gm. a day. There were no symptoms of otic toxicity during this time. The drug used was Pfizer lot 461.[7] She was started on a second course of treatment with Merck lot 398 on June 10, 1946. The same day she began complaining of subjective vertigo. This consisted of a sensation of turning in bed. She was allowed to be up during the course, and the symptom became somewhat worse when she was upright. The course was terminated early because of this symptom. The initial otologic examination was done on June 19, 1946. The audiogram showed a high tone loss at frequencies of 4,096 and 8,192 bilaterally. The Romberg sign was positive, the patient falling to the right. There was a lack of response to irrigation of both canals with ice water for five minutes. This test was repeated on Aug. 8, 1946 with the same response. On August 20 she showed slight response to the instillation of water at 44 C. and to rotation. These responses were increased on Sept. 3, 1946 almost to the normal level. Her vertigo is at present not incapacitating.

CASE 3.—A man aged 22 had peritonitis following a ruptured appendix. On June 22, 1946 he was started on streptomycin therapy and received 3.5 Gm. a day until July 6, 1946. The manufacturer's lot numbers of the drug have not been identified. About June 29 he began to complain of objective vertigo



Audiometric examination (case 1) before and after streptomycin therapy.

increased by shifting his gaze. The room seemed to turn first one way and then the other. This symptom remained the same until he was allowed out of bed; since then it has steadily lessened. He remained in bed during the entire course of treatment. He did not have deafness or tinnitus. Examination on Aug. 20, 1946 showed a normal audiogram. There was no spontaneous nystagmus. The Romberg sign was normal. Irrigation of both canals with ice water for five minutes did not produce nystagmus. Rotation ten times in twenty seconds failed to produce a response. On Aug. 21, 1946 there was no response to the instillation of water for five minutes at 30 C. and 44 C. and to rotation ten times in ten seconds. On Sept. 9, 1946 there was a 1 degree nystagmus of twenty seconds duration after irrigation of the auditory canals with ice water for three minutes. At present he has been discharged from the hospital and is able to work.

CASE 4.—A 32 year old man with subacute bacterial endocarditis started treatment on May 8, 1946 with a dosage of 3 Gm. streptomycin a day from Pfizer lot 461. Simultaneously he received penicillin 100,000 units every four hours. On May 23, 1946 a generalized cutaneous rash developed. On May 25 the administration of penicillin was discontinued and the type of streptomycin changed to Merck lot 398. Treatment was discontinued on May 28, 1946. On the same day the patient began to complain of dizziness. His first otologic examination was on May 29, 1946. He had moderate bilateral hyperostosis of the auditory canal, so irrigation was performed for five minutes with ice water through a ureteral catheter. There was no nystagmus. This procedure was repeated on Aug. 8 and 20, 1946 with the same results. His audiogram was normal. Subjec-

7. Chas. Pfizer & Company, Inc.

tively his vertigo has shown a steady decrease. He is up and around at present, and this symptom is not incapacitating.

CASE 5.—S. B., the first patient treated with streptomycin at Presbyterian Hospital, reported through the courtesy of Dr. Alvan Barach, was a man aged 38 with pulmonary tuberculosis. He was started on a streptomycin dosage of 250,000 units every four hours (Merck lot 280) on July 17, 1945. After four doses his temperature rose to 101 F., and during his daily trip to the bathroom he suddenly lost consciousness. This lasted only a few minutes, and he felt no ill effects the following day. Administration of the drug was discontinued, and three days later, on July 20, 1945 he was started on Merck lot 284 with the same dosage. During the next three days he experienced increasing generalized aching and joint pains. This became so severe that treatment was again discontinued on July 23, 1945. On July 25 the drug was resumed and a third lot, Merck 303, was used in the same dosage. There were no signs of toxicity until August 7, two weeks after the initiation of treatment. He began complaining of vertigo and impaired muscular coordination. On this account treatment was stopped Aug. 11, 1945. His vertigo showed a gradual steady decrease. On Jan. 21, 1946 a caloric test was performed which showed a lack of response to ice water instilled for five minutes bilaterally. On Sept. 3, 1946 there was no response to water at 30 and 44 C. instilled for 40 seconds bilaterally. At present vertigo has almost completely disappeared. He has not complained of impaired hearing. The results of audiograms at the time of the caloric tests are shown in table 4. At present there is no apparent hearing loss with normal conversation. An audiogram was not made before streptomycin therapy began.

TABLE 4.—*Audiograms in Case Five*

		128	256	512	1,024	2,048	4,096	8,192
Jan. 21	R	10	15	15	25	30	55	50
	L	10	10	15	35	35	75	55
Sept. 3	R	10	5	5	25	35	50	40
	L	10	5	5	35	45	55	50

CASE 6.—W. P., a patient in Babies Hospital reported through the courtesy of Dr. H. R. Craig, was a boy aged 5 with a diagnosis of tuberculous meningitis. On May 4, 1946 he was started on streptomycin therapy, 50,000 units given intrathecally twice a day. This was discontinued on May 25. On May 14 a spontaneous vertical nystagmus had been noted. On May 27 progressive bilateral loss of hearing was observed. From June 4 to 20, 1946 he received 160,000 units of the drug every three hours intramuscularly and 100,000 units a day intrathecally. On July 7, 1946 there was no nystagmus after irrigation with ice water bilaterally. It was believed that there was complete deafness at this time. On July 16, 1946 he was discharged from the hospital improved, and with a normal spinal fluid. On Sept. 1, 1946 he was readmitted because of signs of exacerbation of the meningitis. The deafness was still complete. On Sept. 5, 1946 he was started on a streptomycin dosage of 120,000 units every three hours given intramuscularly and 100,000 units a day intrathecally. He did not complain of vertigo but was still totally deaf. At the time of his death Dec. 1, 1946. The lot numbers of the drug used have not been identified.

COMMENT

We have observed several other cases of otic complications following streptomycin therapy through the courtesy of Dr. H. C. Hinshaw and Dr. H. A. Brown of the Mayo Clinic and Dr. Walsh McDermott of the New York Hospital. It is evident that a high incidence of vestibular disturbance and a sizeable number of cases of deafness, either transitory or permanent, will occur with the use of streptomycin of even the best current manufacture if large doses of the drug are given over prolonged periods.

As a rule the onset of otic symptoms, should they occur, is on the seventeenth to twentieth day if 3 Gm. of the drug is given per day.[8] On the other hand, we have seen 1 case in which otic symptoms started on the seventh day, and Brown and Hinshaw [4] reported a case in which they started on the eighty-eighth day. In 1 of our cases the symptoms started on the first day of a second course of treatments. Whether this was due to sensitization is a subject for speculation. It is hoped that it can be proved that the toxic symptoms are caused by impurities in the drug. To prove this all patients should have audiograms and quantitative caloric tests by the Fitzgerald, Cawthorne and Hallpike technic [5] before and after streptomycin therapy, and all manufacturer's names and lot numbers should be carefully recorded. The temporal bones of all patients who die after streptomycin therapy should be removed and sectioned.[9]

Fortunately the patient seems to recover from deafness in the majority of cases, and even if the caloric response remains negative the accessory balance mechanisms compensate marvelously for totally dead labyrinths, so that this need not be feared. In fact the vertigo usually lessens even if the therapy is continued in spite of it.[6]

The mechanism of the otic complications of streptomycin therapy is unclear. The cause could be either a labyrinthine or retrolabyrinthine lesion. Examination of pathologic material to date from the brains of dogs and human beings has failed to show any lesion attributable to streptomycin in the auditory tracts. Satisfactory temporal bone material is not yet available for study. It is noteworthy that most of the cases of deafness so far reported have been in patients with meningitis. In only 1 of our cases was the deafness in conjunction with tuberculous meningitis. Dr. McDermott's patients also did not have tuberculous meningitis. To be sure, deafness is not as a rule a permanent feature of this disease, but in its presence one can never be certain that supervening deafness is caused by streptomycin. This is also true of influenzal meningitis, of which we have seen 1 case with recovery, total deafness and total loss of vestibular response.

Brown and Hinshaw [4] emphasize that in all their cases a low pitched tinnitus occurred and that the deafness was largely in the low frequency range. This has not been true with the cases which we have seen; in fact, 2 patients, cases 1 and 5, complained of high pitched tinnitus and they later had a greater degree of deafness for the high than for the low tones. We agree, however, that the occurrence of tinnitus may well be the sign of impending deafness. Since tinnitus is a subjective symptom, one must be careful not to induce it by suggestion.

SUMMARY

1. Eighty-one streptomycin-treated patients were examined for evidence of aural toxicity.

2. Two months after the cessation of therapy 3 of these patients showed an absence of vestibular response. During the third month after therapy 1 of these 3 has shown increasing recovery of response. All 3 complained spontaneously of dizziness during treatment. This symptom has decreased steadily and is at present not incapacitating. Except for 1 patient showing a probably unrelated high tone loss, the audiogram was normal in these 3 patients.

8. McDermott, W.: Personal communication to the authors.

9. If the bones are placed in 400 cc. of 20 per cent solution of formaldehyde for twenty-four hours and transferred to 400 cc. of fresh buffered 10 per cent solution of formaldehyde every day for four days, and are then shipped to the Department of Otolaryngology, College of Physicians and Surgeons, 630 West One Hundred and Sixty-Eighth Street, New York, with a complete history, a set of serial sections and a pathology report will be returned to the sender.

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3. Another patient showed a severe loss of hearing two weeks after treatment. One month after treatment he had shown decided improvement in hearing. He had a normal vestibular response throughout.

4. Because of the possibility of complications, the indications for the use of streptomycin should be carefully considered in each case. However, when indicated the drug should not be withheld because of this danger. The occurrence of otic symptoms during streptomycin therapy should call for a reconsideration of the case before continuing the administration of the drug. If streptomycin therapy is continued, the drug with another manufacturer's lot number should be tried.

5. An audiogram and vestibular test should be performed before the initiation of streptomycin therapy.

6. The low tone and high tone losses here reported are probably not due to streptomycin, except in 2 cases (1 and 5). The low tone losses are probably due to outside interference. The losses in high-pitched tones relatively unimportant in the hearing of speech are the type commonly found in soldiers who have served in active combat.

INDUSTRIAL PHYSICAL EXAMINATIONS

Objectives and Methods

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The industrial physical examination is a tool which when correctly used is an effective instrument for the proper placement of employees. Like all instruments, however, it has its limitations, and when improperly used may be ineffective or may even become a liability.

Workmen's compensation laws, holding employers responsible for the care of occupational injuries, chiefly were instrumental in the introduction of physical examinations in industry. This responsibility encouraged the attempt to weed out by examination all but the most physically fit workers, eliminating those with physical defects, who, it was thought, might have a higher accident frequency.

This method did not result in the desired lessening of industrial accidents; it was found that freedom from physical defect is not necessarily synonymous with freedom from accident proneness. Physical standards were placed so high in many instances, however, that workers physically substandard in some detail, yet perfectly capable of satisfactory employment in many occupations, were eliminated from the work force.

The use of industrial examinations as a bar to employment instead of as an aid to maximum utilization of workers naturally resulted in resistance on the part of employees to examining programs. This resistance is still found in many industries where preemployment examinations are prohibited in the union contract. It undoubtedly results from the lack of understanding of the true objectives of industrial examinations or from suspicion of the motives of the employer in their use.

For these reasons the industrial physician not only must understand the objectives of industrial examining but must continually bear in mind his professional relationship both to the worker and to the employer. He must strive always to be impartial, to base his opinions on facts and to be uninfluenced by the wishes of either the worker or the employer.

Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

Generally, the weeding-out concept of industrial examining has given way to a sounder policy: (1) use of the examination program for the proper placement of workers, especially those having defects which in some way limit their capacities, and (2) maintenance of the health of employees.

In the use of the examination as a placement aid, the labor union and the industrial physician share a common point of view; it is the aim of both to attain maximum utilization and protection of the worker. Labor unions whose leadership understands this principle now insist on physical examinations as a part of the advanced employee relations program.

The industrial physician should understand the importance of an advanced industrial medical program in the fulfilment of the important objective of full employment and must be prepared to render constructive service. It is my purpose to discuss the proper objectives of industrial physical examining and to examine methods by which these objectives may be most effectively attained.

The pre-employment physical examination is most generally thought of in a discussion of industrial examinations, but the complete examining program required by modern industry is far more comprehensive and may be divided into these five classes: (1) pre-employment, (2) occupational hazard, (3) maintenance of health, (4) management, and (5) special examinations.

PRE-EMPLOYMENT EXAMINATIONS

The primary purpose of the pre-employment examination is to select for the employer workers with the necessary skills and capacities to perform the work which he must have done, and to permit the worker to perform all types of work for which he is capable. To achieve this purpose, the examination must be designed to accomplish these things: (1) determination of those workers who are physically unfit for work and who must be rejected; (2) acceptance of workers who are physically capable of performing without limitation the work to be done, and (3) classification of workers with physical defects or disabilities so that they may be permitted to perform work which they are capable of doing while at the same time they are protected from the particular work which would be hazardous to them or in which they would constitute a hazard to others.

Basically, this examination requires evaluation of the worker only in relation to his work requirements and consequently need only be sufficiently detailed to permit the examining physician to formulate a reasonable opinion, based on the worker's medical history and the findings of the examination. The nature of the work determines the extent of the examination; where light, nonhazardous work only is required, a cursory examination might suffice; in industries where heavy labor or high physical capacities are required or where hazards are great, a more thorough examination is essential:

Generally, it is sufficient to determine that the worker has normal vision, hearing and use of the extremities and is free from communicable disease, serious disease of the heart or the lungs, hernia, deformity or any other condition which would be aggravated by employment.

Depending on the needs of the specific industrial plant, this basic examination may be expanded in many ways; for example, in a plant where high noise levels are encountered, closer attention must be given the ears, while in a factory where much heavy lifting is done, special attention must be paid to the body structure, back and hernias.

I have not mentioned the consideration of psychologic factors in the examination. There is now much discussion regarding personality testing as a means of proper placement. This is a special field that requires expert evaluation of the methods in use and cannot be delegated to a few minutes of the time of the physician who makes the pre-employment examination.

When workers who are being examined exhibit definite signs of mental derangement, the physician cannot ignore these signs. If the worker does not show obvious signs of derangement, it is my opinion that the examiner should not attempt psychoanalysis, for which he generally is not thoroughly qualified. I believe that the front door to employment should be held open to all but the obviously mentally deranged, but that the physician should keep a watchful eye on the "back door"—emotional and adjustment problems which arise within the plant. When an employee demonstrates that he is maladjusted to his job or environment, the physician can assist in re-evaluation of the worker. When psychologic factors are responsible, the problem is one for the skilled clinician, who should be fully acquainted with the worker's medical history and industrial environment.

Workers accepted for employment are further evaluated by the physician, and those found to have some defect or deformity must be afforded protection.

Many systems have been developed to facilitate the use of these physically substandard workers, and refinements of these systems are being made constantly. The requirements of the successful system are: (1) simplicity, (2) ready understandability and acceptance by lay supervision and (3) minimal limitation of the worker.

The hallmark of the successful placement system, regardless of the method used, is its ease of application and maximum freedom for the employee except in the performance of work which would be hazardous to him.

These opinions have been formed over a period of years, during which time these principles have been used in the examination of more than 300,000 employees, of whom more than 15,000 physically substandard workers were successfully placed. This experience taught me, however, that the cursory examination does not give the employer the maximum benefit from the examining program.

The slight additional cost and time required for performance of the complete examination is fully warranted by its greater value. In the course of a worker's employment there are many conditions which may be of considerable importance but which can be discovered only by the use of such aids to examination as the urinalysis, the roentgenogram of the chest and the Wassermann test. Other criteria which are helpful and which may be noted in little additional time are the presence of abnormal conditions of the nose and throat, oral hygiene, weight record, pulse rate, temperature, blood pressure and deformities, including adequate description of their extent and limiting action.

In my opinion the urinalysis is an indispensable part of a desirable pre-employment examination, if for no other reason than as a means of detecting diabetes.

A general physical examination cannot be said to be complete unless a roentgenogram of the chest has been made, for minimal pulmonary lesions cannot be detected by the usual examination procedures. It is important, then, to include this laboratory aid in a complete industrial examination, especially for workers in occupations in which dusts or fumes are encountered, both because of the possibility of aggravation of an existing condition and because of the tendency of workers to believe that pulmonary conditions result from exposure to dust or fumes.

The percentage of pathologic conditions discovered in routine roentgenograms of the chest is small but sufficiently significant to warrant their routine use, especially since the small film equipment has reduced the cost to a few cents.

My experience during 1945, covering more than 15,000 routine 4 by 5 inch (10.2 by 12.7 cm.) roentgenograms of the chest, revealed 5.3 per cent significant pulmonary and 1.4 per cent significant cardiac pathologic conditions. Of the pulmonary pathologic conditions, approximately one half (2.7 per cent of all cases) were tuberculous. In two thirds of these (1.9 per cent of all cases) the tuberculosis was considered active: minimal, moderately advanced or far advanced. Stated as a percentage figure this does not seem large, but when one considers that this represents 288 cases of tuberculosis that warranted further clinical study and treatment, the problem assumes real significance.

I have had some experience with the chest roentgenologic surveys of public agencies and believe that until industry in general is better prepared to do this work such surveys are valuable for case finding; however, they should be better coordinated with the medical departments of industry, and the physician in industry should be given the findings of such surveys.

The Wassermann examination, in my opinion, is the least important laboratory test from the strictly industrial point of view. I do feel, however, that industry should cooperate as far as possible with the public health agencies in case finding, provided that these agencies are prepared to carry out a complete and effective program.

The program of physical evaluation is a part of the industrial placement program, and the examining physician, in fact, is a key member of the team for assignment of manpower. As such, his efforts should supplement and support the efforts of the other placement specialists—the interviewer, the job counsellor, the personnel adviser and the plant supervisor. He should use this opportunity to acquaint the worker with his physical status and to stimulate in him the responsibility for the maintenance of health.

Medical records obtained by examination, although confidential in nature, are no more privileged than other records of workers, and placement officials have a responsibility as great as that of the physician for proper regard for such information. The physician has no reason to object to discussion of medical information with interviewers or placement personnel when such discussion will increase the usefulness of the worker or contribute to his efficiency and safety on the job.

For physicians who inherently object to revealing medical information to lay persons, it might be well to point out that the usual physician-patient relationship is not established by the pre-employment examination, because the applicant does not choose the physician but merely submits to examination as a condition for obtaining employment. Because the usual professional relationship is lacking, medical records obtained by the examination are not privileged to the physician alone but become a part of the employer's confidential files and available to those authorized by the company to use them. Such authorization should be given to as few persons as possible, and the records should be kept

in the medical department under the control of a physician, nurse or competent medical clerk.

Interpretation of physical factors or laboratory reports should be done only by a physician and should never be delegated to an interviewer or employment manager without medical training. It is impossible for a layman to translate diagnoses or laboratory reports into terms of ability to work. I have seen injustices result from such practices.

In a company employing several thousand workers in scattered locations, it was the practice to have the physical examination done close to the place of work. The completed forms, giving the detailed findings but not their interpretation, were forwarded by the physicians to the employment manager in another city, where the decision regarding employability was made. In one instance a person in a responsible position was refused employment after the company had financed the moving of his family across the United States because in the report of the physical examination there was a statement that his urine contained "sugar 2+." To the employment manager this statement meant diabetes, and diabetes meant unemployability. Both of these assumptions were incorrect.

Information transmitted to lay supervisory personnel or to personnel records should be for the one purpose of classifying the employee's ability to work, and should never reveal specific diagnoses. Classifications should be meaningful, however. Such terms as excellent, fair or poor are too general and are relatively useless. I can recommend the following classification system:

Group 1: "Unlimited." Acceptable for any type of work.

Group 2: "Limited." If a physical handicap or defect is serious enough to limit a person's working ability, constitute a hazard at work, or be seriously aggravated by some type of work, such a person will be classified as limited and placed in one or more of the following classes, which are intended to describe in lay terms the type of work which he should avoid. The reason for the limitation is a confidential matter and of no practical interest to the supervisor as long as he is aware of the type of work prohibited.

Class I—No hazardous machinery
Class II—No heavy lifting
Class III—Work at ground level only
Class IV—Avoid contact with or exposure to [agent or substance to be specified]
Class V—No extensive walking or standing
Class VI—Miscellaneous (this may be expanded to other classes as needed by the type of industry)

Group 3: "Severe Handicaps" involving special placement problems (as the blind). Transfers are not to be made without approval of the Medical Department.

Group 4: "Temporarily Unable to Work" because of a transitory condition or a correctible defect.

Group 5: "Rejection." Serious physical or mental disease or disability rendering the persons unfit for any work.

In addition to serving as a record on which the examining physician bases his recommendations for placement, the medical report is of great value to the employer as a record of the worker's physical condition at the time of employment. The worker's physical condition is subject to change with time, and in the older age groups particularly there is an increasing tendency on the part of employees to attribute progressive physical decline to occupational causes. In case of claim of alleged occupational injury, the examination record is of considerable medicolegal value, provided—and this point cannot be stressed too strongly—the record is fully and properly detailed. If it is inadequate or incomplete, it may prove a liability to the employer. The moral here is that industry can gain much from pre-employment examining, but if it is done, it must be done right; otherwise it had best be left entirely undone.

OCCUPATIONAL HAZARD EXAMINATIONS

The prevention of occupational disease is the primary objective of the occupational hazard examination. The need for this type of examination is dictated by hazards to which the worker is exposed during employment.

To determine the occupational hazard examinations required in any industry and the frequency with which workers must be examined, it is first necessary to determine the nature of the hazards involved. This is accomplished by a survey of the plant, its processes, facilities, working conditions and environment. Such a survey can be made only by an experienced industrial hygienist.

In addition to determining the conditions and processes which present occupational hazards, the hygienist is qualified to recommend safety devices and control equipment to minimize such hazards. He is best qualified to select groups of employees requiring periodic examinations, to maintain current lists of exposed workers and to establish control of new groups when processes are changed, and he, together with the plant physician, must decide the type and frequency of the examinations needed.

I wish to stress the union of the industrial hygiene surveys and the examinations as a combined control function. It is well to know that the dust counts in the sandblasting area or the lead concentrations in the air in the foundry are within normal limits, but it is equally important to know that the roentgenograms of the chest and the blood lead determinations of the workers exposed in these areas are normal. The clinical tests act as a double check on the control measures and serve to detect those with abnormal sensitivity or susceptibility.

In this type of examination it is not always necessary to do a complete physical examination, but if it can be combined with the annual health audit examination discussed later, so much the better.

Some occupational hazard examinations should be done more frequently than annually; for example, (1) audiograms to detect loss of hearing in high noise level areas should be done within thirty days after initial exposure and repeated at six month intervals; (2) complete blood counts should be done at three month intervals on employees exposed to certain aromatic solvent vapors; (3) blood lead determinations should be done at six month intervals in lead exposures; (4) roentgenograms of the chest should be done at six to twelve month intervals in dusty occupations, depending on the intensity and the duration of the exposure; (5) Geiger-Muller counts are indicated at two to six month intervals for workers exposed to radioactive material, and (6) nasal examination is required at three month intervals in chromic acid fume exposures.

It is our opinion that education of the employee is an important part of the program for occupational disease control. Employees should not be kept in ignorance of the hazards involved in their work because of the employer's fear that this knowledge might induce

them to bring unjust claims for imagined injury. It has been our experience that employee morale is improved when the workers are aware of the protection afforded by the continuing plant surveys and periodic examinations.

To describe in any detail the countless occupational hazards encountered in American industry and the necessary clinical and laboratory examinations required to protect workers is not possible in this paper, but the principles involved may be illustrated.

A new bullet-proofing process for gas tanks was introduced, with the assurance of the manufacturer who supplied one of the solvents that it was nontoxic under the conditions of its use. Within a few days several workers became nauseated from the fumes, and a work stoppage was threatened because of the increasing number who became ill. Investigation by the industrial hygienist who had previously been uninformed of this new process revealed the solvent to contain benzene. Fortunately, the early complaints and immediate analysis by the hygienist prevented fatalities which could have been expected in view of the well known cumulative effect and high mortality rate of exposure to benzene.

This emphasizes the necessity for the approval of all new processes by the industrial hygienist before their use, particularly since in this case a nontoxic substitute was readily available.

Recently a new tank-sealing operation was installed, in which monochlorobenzene was used. An unpleasant odor was associated with the process. Although frequent analyses of the air proved the safety and ventilating equipment adequate to keep the fumes within safe concentrations, a great deal of apprehension was present on the part of the employees, and when, coincidentally, one employee died of a heart attack and another became ill with gallstones, the entire department was reluctant to continue work. The union demanded monthly examinations of all employees in the department. This demand was excessive, considering the nature of the hazards and the excellent controls.

Examinations at six month intervals had been planned. It was agreed to compromise by examining a portion of the exposed workers every month, thereby affording a continuous sampling check and assuring all workers that they would be checked at six month intervals.

I point out that this process was approved by the hygienist and adequately controlled at the time of installation. This fact, however, did not prevent mass fear from developing and emphasizes the necessity of educating employees regarding the adequacy of measures taken for their protection.

HEALTH MAINTENANCE EXAMINATIONS

Man power is industry's most important resource. This fact, long ignored, has been proved recently by the wartime shortages in man power, and from this experience industry has learned that as it conserves its material resources, it must now begin to conserve its man power resources.

The keystone of the program of man power conservation is the annual health maintenance audit, the purpose of which is to detect the onset of disabling disease and disability, permitting correction in the early stages and prolonging the useful life expectancy of workers.

Unlike the pre-employment examination, which is a simple process of selection aimed at effecting proper placement, the "health audit" comprises a total evaluation for the worker's physical condition, and consequently a thorough general examination is indicated. This examination must be supplemented by necessary laboratory aids, including urinalysis, blood count and hemoglobin determination and a roentgenogram of the chest.

Since the unqualified support of the worker is necessary for the success of the program of man power conservation, the professional relationship between physician and worker assumes greater importance than in the pre-employment examination. In the latter, as previously pointed out, the physician acts as a representative of the employer and exerts an influence on the worker's ability to secure employment; consequently, the only part of the traditional physician-patient relationship which exists in the pre-employment examination is the worker's privilege of knowing of any condition which the physician detects.

In the program of health maintenance the physician is the friendly counsellor of the worker, seeking to assist him in prolonging his useful life expectancy, and a limited physician-patient relationship is created. This differs from the relationship of the private physician with his patient in that the examining physician, having found a condition requiring treatment, refers the worker to his private physician for further diagnosis and treatment. He does not generally undertake the treatment of employees.

The necessary cooperation of the worker is obtained for the program when he fully understands his relationship with the physician, the purpose of the examination and the fact that his employment status will not be affected by the conditions revealed by the examination—unless such change will be to his benefit. This point is fundamental, and its principle must be zealously guarded by the physician. Any suspicion on the part of workers that the examination may be used by the employer to eliminate from the working force those who show signs of physical deterioration will result in immediate reaction against the entire program and will doom it to failure. The physician is the key factor in preventing corruption of this principle. He must treat all information he receives through the examination in professional confidence and must never disclose privileged information to the employer or supervisory personnel without the consent of the worker.

When the program for the conservation of man power is properly conceived and executed, it produces significant benefits for both employer and workers. The Metropolitan Life Insurance Company, for example, has given annual health audits to its employees for many years and has determined scientifically that the average useful life expectancy of workers is prolonged by more than 24 per cent through this program for the protection of health. The benefits of this longer earning life are readily understandable as they affect the worker, but have only recently been appreciated by industry. In this age of specialization, however, when the period required to acquire necessary occupational skills is being steadily lengthened, the savings to the employer in replacement cost of skilled workers under a program for the protection of health become obvious.

I might cite many examples of the early detection of disease such as tuberculosis and diabetes in workers who had no complaints, as well as cases in which it was necessary to prove to workers with functional complaints that no organic pathologic conditions existed. This phase is as important as the detection of real disease, for functional conditions brought on by the

nervous tensions of work and maladjustment can be as disabling as organic disease.

This is well illustrated by the case of a supervisor of inspection who at the time of his examination complained of indigestion, pain about the heart, excessive fatigue, poor sleep and loss of weight. He was certain that he had some serious condition, such as cancer of the stomach. It was learned that he was intense in his work, put in long hours and worried greatly over the possibility of errors in his job and the resulting consequences to the airplane. He had similar but less severe symptoms the year before, but they had cleared up during the course of recuperation from a minor operation.

Physical examination revealed no evidence of organic disease, and my colleagues and I were able to convince him of this through the use of laboratory tests. He was, however, suffering from a severe state of chronic fatigue, and there was no doubt that his condition was in part related to his inability to remain the master of his job. A leave of absence was arranged, and a program was outlined for him to follow. On his return to work a new assignment was arranged, which carried less responsibility. He has been satisfactorily adjusted and productive in his new job for over a year.

MANAGEMENT EXAMINATIONS

The one resource without which industry cannot operate successfully is management and supervisory personnel, and it is the purpose of the program of examination for executives to conserve this all-important personnel. Executives are most capable of understanding the purposes of the program having to do with health and are best situated to appreciate the findings of the examination and to obtain necessary treatment.

The business of management has its peculiar occupational hazards, and these are related mainly to the mental and nervous processes rather than to the physical. The task of guiding industry in these complicated modern times subjects the executive to continuous nervous and emotional stimuli, which, acting through the autonomic nervous system, frequently effect functional alterations with accompanying disturbing symptoms. These are usually associated with the gastrointestinal or cardiorespiratory system.

It is the role of the physician to determine whether these symptoms result from organic pathologic conditions or functional disorder. This requires a thorough, complete examination, including urinalysis, blood count, serologic test, electrocardiogram and roentgenograms of the chest and the teeth.

The person who experiences symptoms of a functional nature must actually be convinced by being confronted with positive evidence of the absence of organic disease. It may be necessary, therefore, to prove that a disorder which he believes to be pathologic results from a functional cause. Such proof to support the clinical observations is obtainable through the use of many laboratory aids. The promiscuous use of laboratory tests is not advocated.

In this examination the highest form of physician-patient relationship must be developed. The industrial physician becomes the confidant of the executive and must be available to him for consultation and reassurance. Since the physician is familiar with the executive's daily industrial problems, he is better able to counsel him.

The invaluable assistance which a physician may render not only to the executive but also to the company is illustrated by the case of an experienced executive in whom, in the midst of an extended period of negotiations under adverse conditions, distressing cardiac and gastrointestinal symptoms developed. His annual examination, which had been done a few months previously, was immediately supplemented by gastrointestinal roentgenograms and another electrocardiogram. A diagnosis of duodenal ulcer and frequent extrasystoles was established. He was placed on an appropriate treatment regimen and his activities were reorganized. Immediate improvement was noted, and he was able to continue the assignment to its completion. He has continued his treatment regimen, and recent rechecks of the laboratory tests indicate complete recovery.

This is an example of the combination of functional and early pathologic conditions. The ulcer was readily treated by diet, the cardiac arrhythmia soon subsided under the reassurance and the lessening of the load of work, and the executive was enabled to carry on without loss of time.

SPECIAL EXAMINATIONS

An inestimable number of special examinations are required by industry in general to cope with specialized problems not falling within the scope of the four classifications previously discussed. I shall confine my discussion of these to (1) examinations required by those workers whose employment is contingent on their maintaining a high level of physical fitness and (2) examinations which are used for continuing placement of the worker after employment and which feature in the program of employee relations.

Among the occupational groups where top physical condition is a prerequisite for employment are airplane test pilots, marine divers, locomotive engineers, bus and truck drivers, especially long distance drivers, professional athletes and others. Our experience has been with test pilots, and as their problems are generally indicative of the nature of special physical requirements for other groups also, a discussion of special examinations required for pilots may be illustrative.

The test pilot has a tremendous responsibility to carry under trying conditions. He is charged with testing new designs for airplanes or newly manufactured models. To complete his assignment he must exceed all the performances required of the particular airplane in its regular use; consequently, his physical strain is greater than that experienced by any other pilot. Further, since this strain results from high speeds, high altitudes, extreme concentration and nervous tension, psychomotor and psychologic conditions are important factors.

In addition to peak physical fitness, the pilot must have perfect vision, nervous balance and physical endurance, and his examination must be specially designed to test these factors to the limit.

The importance of thorough examination is pointed out by the case of a pilot with exceptional ability and experience who casually complained of a symptom of pain in an extremity. Thorough investigation, including neurologic examination, pointed to the probability of a serious nervous system lesion. Although he was scheduled for an important flight operation, the pilot was grounded, and further clinical investigation was

undertaken. The decision to ground him was fortunate, for during the period he would have been flying his condition reached a climax which would have produced disastrous consequences. Without a thorough examination it is probable that a minor complaint of this nature might have been overlooked.

Physical fitness must be coupled with satisfactory mental adjustment for safe operation in flying. Mental maladjustment is just as damaging to a pilot's efficiency as physical deterioration, and the case of a senior pilot illustrates this point. He requested a leave of absence based on a complaint of excessive fatigue following each trip and the inability to become rested before the next trip. He had frequent headaches, felt irritable at times and was inclined to worry unduly over minor details. He attributed his symptoms to the fact that he had not had a vacation for over a year and so reasoned that he should have three months off in order to rest. He started flying when he was 16 years old, had a commercial job at 20 and had flown all sorts of airplanes under the most difficult conditions. He looked back on these experiences as having been associated with a great deal of luck; now, with modern equipment he found himself worrying over minor mechanical problems. He had never had an accident in his fourteen thousand hours but admitted that if any one asked him about the safety of air travel, he could not be convincing because he knew too many things that could go wrong.

His physical examinations had never revealed any abnormality, and the result of the reexamination was the same. The interview developed the fact that he had started flying so early in life that he had not completed more than a high school education and that he consequently felt inferior to the many college graduates with whom he was competing. He had come to the feeling that experience no longer compensated for his lack of additional formal education. He was not desirous of advancement to larger equipment.

This problem centered around a feeling of inadequacy in competition with more formally educated men and the development of a state of anxiety which had become so deeply fixed that it was doubtful whether he could satisfactorily be readjusted to his job. Following his leave of absence he returned to work for a temporary period but soon had a recurrence of his previous symptoms and had to make a readjustment into a new occupation.

This emphasizes the necessity of extending the examination beyond the purely physical to include personality evaluation in order to arrive at a satisfactory solution of the individual problem.

The industrial physician's responsibility for the correct placement of employees is not terminated at the time of hire, but continues throughout the worker's employment. When evidence is found that the worker has become maladjusted in his occupation, it is the physician's responsibility to reevaluate his physical capacities and mental adjustments to determine what occupational changes, if any, are necessary to establish readjustment. Instances of maladjustment are usually brought to light by plant supervision, and the physician serves as an adviser to the supervisor in this type of examination. His recommendations should assist the supervisor in effecting a better placement for the employee when this is found necessary. Since the worker's physical condition is constantly changing and may be deteriorating steadily, replacement is unavoidable in many cases and should be guided by the physician.

Employees maladjusted to their work for physical, nervous or mental reasons fall into two groups: (1) those who seek to minimize their limitations and seek greater occupational opportunities than they are capable of performing, and (2) those who seek to obtain special privileges, lighter work and perferred shifts by taking maximum advantage of their difficulties, real or imagined.

With the first group the industrial physician must point out to the worker the nature of his limitation and its effect on his physical capacity. He must also inform him of the requirements of the job he desires and the possible results if he were to perform the work from which he has been prohibited.

With the privilege-seeking group the physician's task is more difficult. Having determined their real physical capacity, he is faced with the necessity of convincing them that they are physically capable of performing the work requested of them—and of securing their agreement to do so. Since the malingerer, the loafer and the socially insecure fall into this group, the physician's task is a difficult one, and it is unfortunate that the percentage of successful replacements is low.

Minor physical complaints are frequently used as subterfuges to obtain a change of jobs desired by the worker for other reasons. An example is the case of a young male employee who requested a change from the evening to the day shift on the basis of the aggravation by the night air of an existing bronchitis and sinus infection. The working conditions on this shift were not such as ordinarily to aggravate such a condition; therefore his request was denied. He used every pressure to try to force the change on the basis of his health. It was discovered that his real reason for desiring the change was to allow him to continue playing night baseball, which gave him a much greater exposure to night air than did work within the plant.

When it is impossible to satisfy workers in either of the two groups mentioned, a union grievance may result and the problem becomes one of employee relations. In the solution of this problem, the company must depend in large part on the wisdom of the physician. If he has used good judgment and has carefully documented his observations, they carry great weight in the employer's defense against the worker's grievance.

Employees returning to work after absence due to illness or injury should be reevaluated before being allowed to return to work, as it is obvious that sickness or injury may alter an employee's physical capacity for work either temporarily or permanently. The industrial physician must be sure in setting up a procedure to screen employees returning to work after illness or injury that the procedure is practical, both from the medical and from the supervisor's point of view.

From the medical point of view, these examinations should not be stereotyped but should be suited to every individual case. It affords the opportunity to reexamine employees who have not been examined for a year or more and to reevaluate by careful physical appraisal the working ability of those who have had a serious injury, illness or operation. Opinions expressed by the employee's private physician should be carefully

considered by the industrial physician, but the latter is usually better able to decide whether or not the employee can return to his regular job, because of his knowledge of the working conditions within the plant.

The industrial physician is not interested in seeing personally all employees who have been absent with minor illnesses for three or four days. If the procedure requires every one who has been absent because of illness or injury for three days or more to clear through the Medical Department before returning to work, the majority of the screening must then be delegated to nurses. I have had experience with extremely rigid medical controls to the point of having every absence of one day or more checked through the medical department. In theory, such a system had many technical advantages. However, the inevitable delays in getting employees to their places of work and arbitrary assignment of a function to the medical department which was largely a function of supervision led to poor cooperation between the medical department and the supervisory personnel.

The policy was changed to place the primary responsibility for releasing an employee to work on his immediate supervisor. In the use of this discretionary power the supervisor was given every aid of the medical department. The relationship between the medical department and the supervisory personnel was greatly improved by this change of emphasis from one of a checking function to one of a service function.

Management in small plants is not generally aware of the need for good medical service, and it is therefore the responsibility of the profession not only to provide good industrial medicine but to undertake an educational program emphasizing the benefits resulting therefrom. Further, the medical profession must assist management in obtaining medical service at a cost compatible with the profits of small industry. This requires the grouping of small plants into units which may be economically serviced by the profession. The industrial physicians must ceaselessly strive to extend the benefits of the profession to all industry.

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ABSTRACT OF DISCUSSION

DR. R. R. BEARD, San Francisco: This paper presents a valuable formulation of facts and opinions which I know to be based on sound experience concerning industrial medical examinations. If I understand Dr. Poole correctly, I disagree with the concept expressed in his statement that the usual physician-patient relationship cannot exist at preplacement examination. That is only partially true. If the preplacement examination is done in an atmosphere of friendly interest, especially with time being taken firmly to establish in the worker's mind the idea that medical examination of his fitness for the contemplated job is for his own advantage, then two purposes at least will be served: first, one will get more complete and more accurate information on which to base one's decision as to placement; second, it will establish an effective relationship for the starting of the health maintenance or constructive health program. It is possible to keep preplacement medical examination records confidential, and I think it is essential. Except where an industrial accident compensation claim is involved, it is our practice to withhold the diagnoses from management. We encourage our employees to talk over their whole medical situation with their supervisors, but if they don't want to do so we keep the diagnosis to ourselves, and what we give to management is a clear statement of the limitations of activity imposed on the individual by the abnormalities which we find, and also the outstanding strengths of the individual. The responsibility for informing employees of abnormalities discovered should not be limited to major defects. The most effective health education is conducted on an individual basis, and the occasion of a medical examination offers an excellent opportunity to give good instruction. There is a challenge to the physician in each preplacement examination, for he is serving not only to find things that will limit the activities of the new employee but also to find ways in which that individual can be bettered. The common acceptance of a twelve months interval for reexamination seems to me to have little objective basis, We may benefit by employing knowledge gained from the school health people in this respect. It has been found there that it is more useful if the interval between examinations is lengthened and a more thorough examination is done at each. If one can concentrate on the individuals who show special need for surveillance at the original examinations or because of excessive absenteeism or advance in age, this can help to maintain the interest of the examiner in doing the work. If he is doing something more than just a routine examination but is looking for something special, he will get more satisfaction from it.

ETHER AND HUMBUG

EVARTS A. GRAHAM, M.D.
St. Louis

It is a great honor to be asked to participate in this centennial celebration of the first public use of ether anesthesia under the auspices of this great medical school and the internationally famous Massachusetts General Hospital, an institution which, in addition to its pioneer use of ether, has to its credit the revelation of the true nature of appendicitis and acute pancreatitis by the great Fitz, as well as many other important discoveries. I accepted the invitation of Dr. Means and Dr. Churchill with great humility and with doubt that I am qualified to do proper justice to the occasion.

The simple remark of Dr. Warren at the finish of the successful demonstration, "Gentlemen, this is no humbug," has always interested me. Its simplicity and brevity suggest a deep and awe-inspiring effect on his emotions, as if he could think of no adequate words with which to express his feeling. Doubtless he could not, and his intense emotional reaction would indicate that he fully realized that the key had been found which would open the door to future developments which could only be faintly seen from his vantage point. Perhaps also he had a sufficiently prophetic vision to see that in time there would be an annual celebration of the event at which a speaker would be invited who would stimulate or even bore his audience by an address which would be much too long and might even contain some humbug. But why did he think it necessary to state that the demonstration was no humbug? If he had been speaking one hundred years later he might have said "Gentlemen, this is no baloney." For the word "humbug" at the time was considered so slangy that, according to Mencken,[1] when William Cullen Bryant became editor of the New York *Evening Post* he refused to permit its use in that newspaper.

We of a later age whose privilege it has been to see medicine established on a firm scientific basis can scarcely appreciate its state at the time at which Morton and Warren conducted their successful demonstration of the use of ether anesthesia. One wonders how much humbug the old Egyptian mummy present in the oper-

From the Department of Surgery, Washington University School of Medicine and Barnes Hospital.

Read at Sanders Theater, Cambridge, Mass., at exercises held at the Massachusetts General Hospital in commemoration of the centenary of the first public administration of ether anesthesia, Oct. 16, 1946.

1. Mencken, H. L.: The American Language, New York, Alfred Knopf, 1945, supp. 1, p. 122.

ating room on the occasion must have heard in his corner. If it could have had any critical judgment and the power of speech it might have raised its voice to say that in its own last illness, thousands of years ago, it had been the victim of medical humbug and that it had heard plenty of humbug addressed to the students of Harvard Medical School in the same room which was about equally unscientific to the medical humbug of a thousand or more years ago.

In 1846 homeopathy was rampant, and so-called regular medicine had just emerged from the domination of the systematists. Those who have recently received their M.D. degrees perhaps do not even know what is meant by the term "systematists." Well, these were zealots who attempted to place all medical symptoms and diseases into simplified systems. The most ardent systematist of his day in the United States was Benjamin Rush of Philadelphia, who was also generally admitted by his contemporaries to be the most outstanding American physician of his time. In 1796 in a lecture given to students at the University of Pennsylvania and subsequently printed and published in his "Lectures on the Practice of Physic" he made the statement, according to Shryock,[2] "I have formerly said that there was but one fever in the world. Be not startled, Gentlemen, follow me and I will say there is but one disease in the world. The proximate cause of disease is irregular convulsive or wrong action in the system affected. This, Gentlemen, is a concise view of my theory of diseases."

Could anybody today imagine any more humbug than that? Yet that statement came from the lips of the most prominent physician in the United States at the time, one who Lettsom of England and Zimmermann of Germany said after his death should be immortalized. Speaking now to a New England audience I may say that it is to the credit of Elisha Bartlett, a New Englander, that he detected the humbug in Rush's writings and, again according to Shryock,[3] in 1843, three years before the event which we are celebrating, had this to say about the opinions of Rush, the great systematist: "It may be safely said that in the whole vast compass of medical literature there cannot be found an equal number of pages containing a greater amount and variety of utter nonsense and unqualified absurdity." Too bad Elisha Bartlett is not alive today to express his views of the writings of another New Englander, Mary Baker G. Eddy!

Of course in 1846 there was no surgery in the modern sense. In fact there were no surgeons as we understand them today. No specialization in medical practice had occurred, and every doctor was a general practitioner. Even as late as 1880 when the American Surgical Association was founded by Gross the original members were all general practitioners. In 1846 the operations that were performed were mostly on the extremities in addition to the removal of bladder stones. The abdominal and other body cavities had been rarely invaded. Speed was considered to be one of the most important factors in the success of an operation, chiefly because of the absence of satisfactory anesthesia. The best surgeons performed a thigh amputation in about three minutes, and Cheselden of London is reputed to have completed an operation for removal of a bladder stone in fifty-four seconds. It is true that in a few cases the operation of ovariotomy for ovarian cyst, initiated by McDowell of Danville, Ky., in 1809, had been performed successfully, but operations within the abdominal and other body cavities were extremely rare and still more rarely successful.

DRAWBACKS TO PROGRESS OF SURGERY

What was needed to advance surgery to make it safe and practical were first of all a more scientific attitude toward medicine as a whole, with the elimination of the humbug, and more specifically these three developments: a satisfactory method of removing pain (surgical anesthesia), the control of infection and the satisfactory prevention and treatment of surgical shock.

When one contemplates the horror attendant on an operation before Morton's time one is compelled to wonder how any one with even ordinary sensibilities could have undertaken to practice the art of surgery. The agonizing pain, the inevitable infection of the wound and the strong probability of the death of the patient were features which would not be likely to attract sensitive men to this profession. Yet we know that many who did practice surgery were sympathetic. In the case records and notes of operations performed about the year 1800 in the New York Hospital, edited by Pool and McGowan[4] a few years ago, there are frequent comments on "the fortitude evinced while under the knife." Rarely if ever nowadays would one find a note in a patient's chart commenting on how well he withstood pain. Are we perhaps less sympathetic because we are supplied with a large armamentarium of pain-killing drugs? Dr. John Brown's "Rab and His Friends," published in 1859, with which doubtless many of you are familiar, portrays an exceedingly sympathetic understanding of the horror and anguish associated with an operation. Again, the kindly sensitive face of Lord Lister bespeaks only the greatest sympathy.

The abolition of pain during an operation through the discovery of the use of ether at once removed one of the three obstacles to the development of surgery. To the layman this important discovery usually implies only that now the patient could undergo an operation without the pain which formerly had to be endured. Actually, however, as with most fundamental discoveries, the results were much more far reaching. Speed no longer was the important factor. Slapdash surgery was supplanted by slower but more careful work. Again, the muscles of the patient were relaxed and there was no struggling. Many modern operations could not be performed without the relaxation of the patient, and in all operations it is desirable that there should be no struggling. But aside from the beneficial effect on the human patient the discovery of anesthesia made it possible to operate on animals without pain. As a result, therefore, of experimental operations painlessly performed on animals a tremendous amount of knowledge was acquired which not only advanced the art of surgery but affected the whole realm of medicine. The functions of organs could now be studied by noting the effects of their removal. For example, how could one suppose that the pancreas was concerned in the use of sugar except by the fact that its removal

2. Shryock, R. H.: The Development of Modern Medicine, Philadelphia, University of Pennsylvania Press, 1936, p. 1.
3. Shryock: The Development of Modern Medicine, p. 2.
4. Pool, E. H., and McGowan, F. J.: Surgery at the New York Hospital One Hundred Years Ago, New York, Paul B. Hoeber, Inc., 1930

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immediately resulted in the condition of diabetes? Various operations on the stomach and intestines of animals taught the physiologists much about the processes of digestion in addition to paving the way for the surgeons to apply some of those operations to man for curative purposes. Indeed, practically all of our fundamental knowledge of the functions of our various organs has been derived from experimental operations on animals, and most of that knowledge has been acquired since it has been possible to use general anesthesia for the experiments. The development of the scientific basis of medicine, therefore, has depended to a considerable degree on the existence of a method of anesthetizing experimental animals. Dr. Warren might have gone further and said "Gentlemen, this is a severe blow to humbug."

The prevention of infection during operations, which was the second of the requirements for the advancement of surgery, was largely the work of the Englishman Lister. The dramatic story of his work is familiar to every medical student and needs not be repeated here. One aspect of it, however, deserves emphasis, particularly to young men who are about to embark on surgical careers. What I have in mind is the fact that the young surgeon in Glasgow, Lister, became acquainted with the work of the young chemist in Paris, Pasteur, from which he received much of the inspiration responsible for his epoch making contributions to surgery. One often gains inspiration and ideas from a knowledge of work in a field apparently remote from one's own.

Even after methods had been established for the prevention of pain and infections during operations, patients too often died for reasons which were by no means clear. The blood pressure would fall, the pulse become rapid and weak and the patient's skin cold and moist. The condition finally became designated as "surgical" or "traumatic shock." Although there are still some poorly understood features of shock, methods of preventing and treating it are now so well known that the condition no longer haunts the surgeon as it did a couple of decades ago. The contrast between the incidence of shock in the last war as compared with the first world war is dramatic. Risking the accusation of being chauvinistic, I like to think that the conquest of surgical shock, like the contribution of surgical anesthesia, has been largely American. One of the first to undertake a serious experimental study into its nature was George Crile, who in 1899 showed the importance of raising the blood pressure by the transfusion of fluid. Although many of his later ideas on the nature of shock were not accepted, he made surgeons everywhere "shock conscious" by his frequent writings and emphasis on the condition. Although blood transfusion, which Crile and others before him recognized as being the ideal remedy for shock produced by hemorrhage, was not practical and safe until the Austrian Landsteiner, also in 1899, demonstrated the different blood groups, the practical and convenient method of administering the blood by the addition of sodium citrate to prevent its clotting was the idea of Lewisohn of New York shortly after World War I. It is doubtful that the transfusion of blood could have been practiced very generally without the simple but important modification of technic that Lewisohn proposed. The modern blood bank, which has made blood readily available for the prevention and treatment of shock in the operating room, is chiefly an American contribution. Moreover, mention should be made of the dried plasma devised by Stuart Mudd and first used in shock by Ravdin, both of Philadelphia, and of the work of your own Cohn in the preparation of albumin and of fibrin foam, the first of several agents developed from the blood to assist in the prevention of hemorrhage, a precursor of shock. It is a pity that time will not allow of a discussion of the important work of Blalock and many others.

Thus two of what seem to me to be the three major foundations of modern surgery have been largely American contributions. We surgeons can take justifiable pride in this fact.

INTERN, PHYSICIAN AND NURSE ANESTHETISTS

But, to return to the subject of anesthesia, Morton could hardly have foreseen that a century after his momentous demonstration of the use of ether there would be many substances available for the elimination of pain during an operation and that many different technics would be available and necessary for the different uses of the anesthetic agents requiring knowledge by those who would use them for their complicated actions on the living body. Likewise it probably did not occur to him that a separate division of medicine known as anesthesiology would arise whose practitioners would be known as anesthesiologists. It's lucky for them as well as for the rest of us that Oliver Wendell Holmes coined that word "anesthesia." It would be horrible to contemplate what we might have suffered if Bigelow's [5] word "insensibility" had remained. What would the present day anesthesiologist then be called?

For more than half a century after the demonstration of ether anesthesia its practice was regarded as so simple and free from danger that it was considered that no special knowledge or training was necessary in order to "give an anesthetic," to use the popular expression current among the house staff. The youngest and most inexperienced interns were entrusted with this complicated and dangerous performance. In retrospect it seems incredible that this could have been so. Yet I well remember my own terrifying experiences as a young intern anesthetist. That many patients died as a result of improperly administered anesthesia goes without saying.

For some strange reason the profession of physician anesthetist, or anesthesiologist, did not make a strong appeal in this country until very recently. Those with M.D. degrees were not attracted to a career as professional anesthetist, although in England, since the early days, probably most of the anesthesia has been entrusted to physicians. In order to obtain better anesthesia than that provided by the unskilled interns, about 1907 Dr. George Crile and the Mayo brothers trained specially selected graduate nurses to take charge of the anesthesia in their clinics. Shortly after the first world war a school for the training of nurse anesthetists was established at the Lakeside Hospital, Cleveland. Later similar schools were created elsewhere, and hundreds of nurses were trained in the art of administering anesthetic drugs. No one can deny that the creation of the nurse anesthetist resulted in a vast improvement

5. Bigelow, H. J.: Insensibility During Surgical Operations Produced by Inhalation, Boston M. & S. J. **35**: 309, 1846.

in the quality of the anesthesia and of the surgery throughout the country. The slipshod practice of having it conducted by interns and still worse by the referring physicians gave way to the employment of professional anesthetists, albeit nurses. Now, however, more and more doctors of medicine are taking up careers as specialists in anesthesiology. This long delayed movement is in the right direction. A splendid example is afforded in your own Dr. Henry Beecher, who is training young doctors to become experts in this field, just as young surgeons and other specialists are being trained, by devoting a period of years to the process. The physician because of his superior education in the science of medicine is better qualified than the nurse to understand the many complicated effects of the anesthetic drugs on the body, and he is more likely to advance our fundamental knowledge of the field.

There are some prominent anesthesiologists who would eliminate completely the nurse anesthetist. They have even supported legislation in some states which would make it illegal for a surgeon to engage the services of a nurse anesthetist. This, it seems to me, is a most unrealistic attitude to take. There are seven thousand hospitals in this country but at most only a few hundred professional physician anesthetists. They can conduct only a small fraction of the anesthesias in the country. Who will handle the rest? Shall we return to the old custom of having the inexperienced intern or the doctor who refers the patient to the surgeon administer the anesthesia? God forbid! The best solution to the problem then is to encourage the training of the nurse anesthetist until there are enough physician anesthesiologists to fill the demand. There has been no opposition, as far as I know, to the idea of the laboratory or x-ray technician. Why should there be opposition to the nurse anesthetist technician? In the larger hospitals she should be under the direction of an anesthesiologist who holds the M.D. degree and has spent several years in graduate training in his field. But in the smaller hospitals, or in those in which a physician anesthesiologist is not available, she will prove invaluable. There is no doubt that already she has saved the lives of thousands who would have died if they had been subjected to the kind of anesthesia which the unskilled physician gives. The possession of the M.D. degree by itself certainly does not qualify one in a professional sense to administer an anesthetic drug safely.

If we are to continue to have nurse anesthetists for at least an indefinite period, where are they to be trained? Should they not receive their instruction in this dangerous art in our best teaching hospitals, where they can have the benefit of the teaching of the best professional anesthesiologists, or should they be compelled to seek their instruction casually in doctors' offices? I think there can be only one answer to this question. Yet again there are those of great influence in this new profession of anesthesiology who would, if they could, abolish all opportunities in our hospitals for the nurse, or for that matter any one not possessing the M.D. degree, to obtain instruction in the art of anesthesia. What would Morton, the dentist, think of that, the man whose epoch-making work we are celebrating today? Let us not have any humbug in affording the benefit of that work to all the people.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(Continued from page 26)

(NOTE.—*Following is the tenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 10. *The Question of Cultism in Medical Practice*

1870-1874

1870

WASHINGTON, D. C.

As the delegates assembled in Washington for the Twenty-First Annual Session in 1870, there were signs of disaffection within the Association. Majority and minority reports from the Committee on Arrangements were promptly referred to the Committee on Ethics for decision. Several members took a hand in the argument. Eventually it developed that the Massachusetts Medical Society was tolerating in its midst men acknowledged to have become homeopaths and eclectics. The committee felt that the society could not be barred from the current convention because of the presence of these members but felt that unless the said society took the necessary steps to purge itself of irregular practitioners it ought not to be entitled to future representation in the American Medical Association.

There was also some disturbance over the number of delegates from the District of Columbia.

THE FOUNDING OF THE JOURNAL

Most important, however, was a resolution introduced by Dr. S. D. Gross to the effect that the Transactions should be published in a journal to be called The American Medical Association Journal, issued monthly under the supervision of a competent doctor. The resolution was referred to a committee of five for their consideration.

At this convention also a resolution was introduced urging the government of the United States to establish a national school of medicine. This resolution was referred to a committee for report the following year.

Much of the time was taken in the consideration of the right of specialists to issue cards announcing their specialties and the right of a physician not a resident of any given state to represent that state in the House of Delegates.

A committee was established to prepare a nomenclature of diseases. By this time also there was some concern over the technic of teaching residents and interns in hospitals, and the society resolved that it was not within the purview of the general management of a hospital to interfere at all with the subject of medical instruction, which belongs to the medical staff.

Far in advance of its time was a resolution requesting the editors of medical journals to refuse to notice in their journals all "patent" medicines, instruments, works of unprofessional or unscientific character, nonchartered institutions or hospitals and the cards of specialists.

ADMISSION OF NEGRO DELEGATES

A considerable division of membership of the Association arose as well over representation of the National Medical Society in the District of Columbia, the Howard Medical College, Freedman's Hospital and the Smallpox Hospital. The majority report made by N. S. Davis would have barred these institutions because of charges that had been filed against them. The minority report, headed by Dr. Alfred Stillé, recommended their admission. The majority report was sustained by a vote of 115 to 90, and these institutions were barred from membership. The nature of the charges was not at first made clear. On the next day, however, the question was again raised and a motion from Dr. G. S. Palmer of Maine demanded the reason for the barring of men from Howard University. Dr. Davis promised to give in writing the reason for the action of the majority of the committee. When Dr. Davis presented his report, it was worded to indicate that the delegates from the medical department of Howard University were barred because they were also members of the National Medical Society of the District of Columbia and that it had been brought to the attention of the Committee on Ethics that the said National Medical Society recognized and received as members medical men who were not licensed to practice. Following the presentation of this report there was further debate, after which Dr. H. R. Storer of Massachusetts offered the following statement:

> Resolved, That inasmuch as it has been distinctly stated and proved that the consideration of race and color has had nothing whatsoever to do with the decision of the question of the reception of the Washington delegates, and inasmuch as charges have been distinctly made in open session today attaching the stigma of dishonor to parties implicated, which charges have not been denied by them, though present, therefore
>
> The report of the majority of the Committee on Ethics be declared, as to all intents and purposes, unanimously adopted by the Association.

This motion passed 112 to 34.

THE LIBRARY

New at this time was the report of the librarian of the American Medical Association, who had been engaged since the last annual meeting in endeavoring to carry out the expressed wishes of the American Medical Association with regard to the formation of an American National Medical Library to be located at Washington, D. C. A circular had been sent widespread and a good many books had been received, but the Congressional Library Committee had not authorized the Library of Congress to receive the books belonging to the American Medical Association as a special deposit. Therefore a room had been fitted up in the Smithsonian Institution to house this library, and a device had been engraved for use on labels of the books belonging to this collection.

ANTICIPATING THE NEED FOR QUININE

Significant at this time was the publication of a memorial that had been sent to the Congress trying to get the Congress to plan for cultivation of the cinchona tree in the United States. When the Japanese occupied Java as one of their first steps in World War II, we realized the need for an American source of cinchona. Had it not been for the development of the synthetic quinacrine hydrochloride (atabrine) and the utilization of some cinchona from South America, we might have found ourselves in a serious state in the war against malaria.

1871

SAN FRANCISCO

Now the Association journeyed for the first time to the Pacific coast and held its meeting in May in San Francisco.

The committee to establish a journal had no report. The committee on nomenclature of diseases reported progress. The committee on medical literature had no report. The trip to the Pacific coast may have exhausted the delegates.

Now also there was introduced for the first time the concept of an organization within medicine itself to raise the standard of medical practice. A resolution proposed that the American Medical Association take measures to establish a National Academy of Medicine to which men of distinction could be elevated from the ranks and that a board of examiners function to govern entrance to this academy. This was no doubt the first step toward certifying boards for specialists.

The Massachusetts Medical Society reported that it had expelled from fellowship all those who publicly professed to practice in accordance with any exclusive dogma, whether calling themselves homeopaths, hydropaths, eclectics or what not.

From the California State Medical Society came a resolution congratulating the states of Massachusetts and California on having established departments of state medicine and urging that all the states set up departments for the prevention of disease and the correction of those agencies which injure the human race and, furthermore, that as soon as six states should set up such departments a National Health Council be formed as an auxiliary to the American Medical Association.

By this time 339 volumes including pamphlets and monographs had been collected in the Smithsonian Institution, but scarcely an American textbook had been added.

WOMEN IN MEDICINE

In his presidential address Dr. Alfred Stillé embarked on an attack on women in the medical profession, admitting their right to study medicine and to practice it but, in general, arguing that they could never qualify to eminence in the profession. Here is an example of his logic:

> Certain women seek to rival men in manly sports and occupations, and the "strong-minded" ape them assiduously in all things, even in dress. In doing so, they may command a sort of admiration such as all monstrous productions inspire, especially when they tend towards a higher type than their own.

But a man with feminine traits of character, or with the frame and carriage of a female, is despised both by the sex he ostensibly belongs to, and that of which he is at once a caricature and a libel. In every department of active life man excels woman, excels her even in things for which she is esteemed most fit. In the arts of design, in painting and sculpture, no woman, albeit the artist's career has always been open to her, has ever risen far above mediocrity; while men have excelled women in not a few employments which are regarded as essentially feminine. In the art of cookery, for example, no woman ever occupied the first rank; and in more than one capital, male hairdressers and dressmakers set the fashions in which court ladies and city dames contend for the palm of beauty.

And he concluded this talk with even more bad logic:

On the whole, then, we believe that all experience teaches that woman is characterized by a combination of distinctive qualities, of which the most striking are uncertainty of rational judgment, capriciousness of sentiment, fickleness of purpose, and indecision of action, which totally unfit her for professional pursuits. Judged by one of her own sex, the verdict is in these words: "The ignorance, the inexactness, the untrustworthiness, the unbusiness-like ways of women, are appalling. Men are as bad as they can be, one is sometimes tempted to say; but apparently they cannot be so bad as women in these respects. Long ages of experience have, at least, educated them into a consciousness of the difference between yes and no; but women have yet to learn that they are not one and the same word. . . . They seem to lack a moral sense, or a mental perception, or whatever the faculty is which makes one capable of contracting an engagement. They do not comprehend its nature. It has for them no more binding force than a rope of sand. They break it with a serene unconsciousness that anything is broken, or that there was anything to break.

If, then, woman is unfitted by nature to become a physician, we should, when we oppose her pretensions, be acquitted of any malicious or even unkindly spirit. We may admit that she is in some sense a perfected man, and was created even a little less lower than the angels; we may admit that, guided by her affections, her judgments sometimes resemble inspirations; but in the business of life, and especially in the practice of a scientific art, it nevertheless may be true, and probably is so, that she usually displays a strange ignorance of the logic of reason, and a profound contempt for the logic of facts.

And he closed his address with a vigorous defense of the use of alcohol in medicine and an attack on those who were fighting the battle of temperance.

1872

PHILADELPHIA

The meeting of 1872 opened in Horticultural Hall but moved shortly to Presbyterian Church because people could not be heard in the original place of meeting. The sessions were largely routine on the first day, with some undistinguished papers and some routine considerations in the House of Delegates.

Then on the second day Dr. S. B. Merkel proposed to bring before the Association George Thomas, "a native of Brazil, who, although externally well formed, can move his heart about at will; and can also whirl the abdomen like a huge ball, with an undulating motion, around the umbilicus." This offer was referred to the Section on the Practice of Medicine and Obstetrics.

There was an extensive report from the committee on nomenclature of diseases, with a recommendation that it be referred for publication, but a minority report said that the matter was too important to be adopted in a hurry and suggested, rather, that extra copies be printed for circulation to the members of the medical profession so that their opinions might be ascertained.

The motion to establish a National Academy of Medicine was brought out and recommended for passage, but the motion was lost and the subject dropped.

STATE HEALTH DEPARTMENTS

The Committee on a National Health Council indicated that it had circularized thirty states with a view to getting the establishment of state health departments and that some progress was being made. However, there was already misunderstanding among the medical profession as to the significance of the term "state medicine" so that the committee said:

As the phrase "State Medicine" is perhaps imperfectly understood by many of the profession, and is absolutely new to the general public, we wish here, parenthetically, to give an idea of what it is, quote the list of subjects which have been suggested as properly appertaining to it by a committee of the General Medical Council of Great Britain. They are: Forensic Medicine, Toxicology, Morbid Anatomy, Psychological Medicine, Laws of Evidence, Preventive Medicine, Vital and Sanitary Statistics, Medical Topography and certain portions of Engineering Science and Practice. In short, as a member of the committee well expresses it, State Medicine consists in the application of medical knowledge and skill to the benefit of communities, which is obviously a very different thing from their application to the benefit of individuals in private or curative medicine.

The concluding action of this committee was to ask that it be continued and that a special section on state medicine and public hygiene be constituted as one of the scientific sections of the Association.

The Committee on Ethics reaffirmed its previous actions relative to the refusal to admit the Freedman Hospital, the Howard University and the Academy of Medicine of Washington, D. C., to representation because some of the members of their staff were unlicensed and because one of the teachers in Howard University was a woman. The battle over the status of the physicians, the societies and the schools in the District of Columbia was fiercely fought on the floor of the convention. At the end of the extensive discussions, the report of the Committee on Ethics barring the representatives from these agencies was adopted by a large majority.

Again the delegates besought the Congress of the United States to give some attention to the cultivation of the cinchona tree, pointing out that the British and the Dutch were hard at work on this project, but apparently Congress refused to take any action.

THE PERMANENT SECRETARY

Now there arose the delicate question of the remuneration of the permanent secretary, Dr. William B. Atkinson. His duties had become more engrossing every year with the growth of the Association and his remuneration was nil. Therefore the resolution was offered that he be paid a salary of $1,000 a year in quarterly payments, and the session unanimously resolved to present him with $500 as a testimonial to his merit.

An attempt was made to get through a resolution upholding Horace Wells as the discoverer of anesthesia, and the resolution was laid on the table. As late as 1946 this question was again before the Association and again it was tabled.

Another resolution suggested that "whilst we admit the right of women to acquire medical education and to practice medicine and surgery in all their departments,

we deem the public association of the sexes in our medical schools and at the mixed clinics of our hospitals, as impracticable, unnecessary, and derogatory to the instincts of true modesty in either sex." This resolution was also laid on the table. After a while a resolution was made to take it off the table, and after some more discussion it was indefinitely postponed.

The President of the Association, Dr. D. W. Yandell, presented a strong defense of the right of women to practice medicine but he would have limited them to certain specialties. He trusted that not many would incline to surgery, but he thought that they would be welcome visitors to many a sick chamber. "If young and handsome," he said, "I have no doubt valetudinarians of our sex would look for their morning calls as they might for angel visits, only that they would not have them 'short and far between.'" He felt that the public should really make the decision on the use of women physicians and he concluded this part of his discussion by saying:

> What the people decree in this matter is a law to which all, we and the women alike, must bow submissively. If they want women doctors, such will be found ready to meet the demand. If those now pressing forward in their studies so eagerly, find their services are not wanted, they will take down their signs, get married—if they can—or turn lecturers, or to some more lucrative employment. I hope they will never embarrass us by a personal application for seats in this Association. I could not vote for that.

1873

ST. LOUIS

Most significant of the business before the Association's meeting in 1873 was the report of the special committee to plan for better arrangements by the sections for the more rigid examination of papers offered for publication. A few of the sections were receiving maximum attendance but a few listeners. A reorganization was suggested. The Committee of Publications was not doing a good job in rejecting unworthy manuscripts and was condemned for its failure to be more strict. That perhaps explains the skimpiness of the volume of Transactions for that year.

THE JUDICIAL COUNCIL

This year saw also a resolution offered by Dr. N. S. Davis for the creation of a judicial council to decide all questions of an ethical or judicial character that might arise in connection with the Association. His resolution was unanimously adopted.

From the Army came a request that the Association join its efforts to obtaining better ranks and higher promotions for the medical officers of the Army.

DISINTEREST IN NOMENCLATURE

The committee on nomenclature reported that not a single response had been received from any medical journal, and only two from physicians, to the request for the circularization of the nomenclature.

A long report dealt with the proposed salary of $1,000 a year for the permanent secretary. The committee felt that the secretary was already receiving payment of his expenses in attendance on the conventions; they felt that the revenue of the Association was inadequate to meet a salary of $1,000 a year and that, furthermore, the payment of the salary of $500 to $1,000 a year would speedily develop a number of aspirants for the position, each with his circle of friends among the members, all of whom would be quick to perceive the errors and to note the slightest tardiness or discourtesy on the part of the incumbent of the office, and that this job would be sought as a political plum. The suggestion of a salary was therefore rejected, but a motion that he be given an honorarium was approved, provided sufficient money was left in the treasury after paying the expenses of the Association.

The meeting closed with a number of resolutions condemning the alarming prevalence of ill effects of intemperance. The resolutions were either tabled or referred to committees.

1874

DETROIT

The second annual session of the Association to take place in Detroit abandoned the Fire House and moved into Hough's Detroit Theatre. Detroit had grown in the intervening years from a city of 40,000 to one of 100,000 inhabitants.

The speech of welcome was a glorification of the growth of this great industrial city and of its new city hall (erected at a cost of $600,000), from whose dome not only the city but Lake Erie was visible. The speaker boasted of the excellent sewerage system, the public school system (due chiefly to Dr. Pitcher), the public library and the police and fire departments.

THE PRINCIPLES OF ETHICS

Significant was the introduction of a report by Dr. N. S. Davis of Illinois, chairman of the Judicial Council, who had ascertained the sentiments of the physicians relative to revisions in the Principles of Ethics. It had been proposed to strike out everything having to do with the relations of the patient, the community and the public toward the members of the profession. It was felt that there ought to be more said about specialties and contract practice. After carefully reviewing the entire subject, the committee did not recommend any alteration in the Code of Ethics but desired "to express the opinion that if every medical school and society would supply each graduate as he left the school, and each member initiated into the society, with a printed copy of the Code, accompanied with the injunction that it be carefully studied, it would be productive of much good, directly to the profession and indirectly to the community." The report was unanimously adopted.

As a result of the pressure brought by the Association a bill had been introduced into the Congress relative to improved status for the medical staff of the Army. The bill had been introduced and referred to the military committee, which however had failed to take action. A resolution was therefore adopted regarding this failure to take action and sent along to the Congress.

INDEX CATALOGUE OF THE SURGEON GENERAL'S LIBRARY

Now also Dr. John Shaw Billings, assistant surgeon, United States Army, by direction of the Surgeon General forwarded to the American Medical Association a copy of the "Catalogue of the Surgeon General's Office" in three volumes. He called attention to the fact that 65,000 titles were now in the library but that this was not more than one third of what the national medical collection should contain. It was proposed to issue a new catalogue arranged according to subjects and authors. He urged physicians everywhere to send to the

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library files of American medical journals, transactions of medical societies, announcements of medical colleges and reports of hospitals, asylums and boards of health. "These medical pamphlets," he said, "cannot be purchased and the only prospect of obtaining them is from the garrets, closets and shelves of physicians who may have preserved them and may be willing to part with them in consideration of the object for which they are desired."

The address of the President, Dr. Joseph M. Toner, made several recommendations which stimulated action in the Association. He urged particularly the formation of a complete system of state and local medical societies and also of an international medical society.

Because the centennial of the founding of the United States was to be celebrated in Philadelphia in 1876, an invitation came from that city to hold the annual session of the American Medical Association in Philadelphia on July 4, 1876 and to invite the medical profession of the world to attend the meetings.

A resolution was passed that a suitable die for a medal be prepared with a likeness of N. S. Davis on one side and the name and date of the organization of the Association on the opposite side, with instructions that a copy be furnished to each delegate on becoming a member and also that all present as well as future members of the Association be furnished with this medal.

A motion was made to recompense the secretary with $300 for his services. On motion of J. Marion Sims of New York, this was increased to $500. The motion was seconded and adopted.

The treasurer of the Association was glad to report that "as a result of more than usual discretion on the part of the last meeting of the Association, and the more than usual care exercised in referring matter to the Committee of Publication, the volume of Transactions is of moderate size." Because of a lack of demand, there had accumulated some 2,000 volumes of previous issues of the Transactions and the treasurer moved that he be allowed to dispose of these. With this suggestion, Dr. Caspar Wistar, the treasurer, offered his resignation.

A resolution was offered by Dr. Keller of Kentucky that a committee be established relative to passing proper legislation to prevent the spread of syphilis.

ADVANCES IN DIAGNOSTIC METHODS

In his presidential address Dr. Joseph Toner called attention to the beginning of laboratory and other technical methods used in the diagnosis and treatment of disease. He said:

> The successful medical man must be fully up with the age and the times, conversant with the latest means of diagnosis, the theory of diseases and their cures. He must have tested the newest remedy, examined the most recent invention; he must have read the latest telegram. And, indeed, the genius of the profession, responding to these demands, has devised physical tests for an exact diagnosis in almost every important disease. There is scarcely a vital function the normal or diseased action of which cannot be determined with accuracy through the aid of some chemical test or mechanical device.[1] The improvement in this direction is still actively progressing.

He called on the medical profession to urge particularly more state, county and city boards of health.

1. The dynamometer, the microscope, the ophthalmoscope, the laryngoscope, the rhinoscope, the stethoscope, the pleximeter, the endoscope, the speculum, the sphygmograph, the spirometer, the thermometer, the anesthesiometer, anesthetics, chemical examination of excretions and so on.

SYPHILIS

The address in surgery was delivered by S. D. Gross and was entitled "Syphilis in Its Relation to the National Health." He said that the assertion that syphilis originated in the new world and was carried back by the sailors of Columbus is without the slightest foundation in truth but, instead, that the sailors of Columbus had infected the natives. While this belief is still subject to some argument today, the vast majority of evidence inclines to the former view. His address was nevertheless a most scholarly presentation of the available knowledge of his day concerning this disease. He urged as the only possible technic for preventing its spread, the licensure of prostitution. He was a little ahead of his time in urging that people should not be allowed to marry until they could obtain a certificate showing that they did not have syphilis—but, of course, at that time there were no accurate tests of the presence of the disease such as the Wassermann and Kahn tests used today.

(To be continued)

Clinical Notes, Suggestions and New Instruments

CONVULSIVE SEIZURES FOLLOWING BARBITURATE WITHDRAWAL

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Despite the well recognized hazards of injudicious use of barbiturates, the controlled employment of these drugs in the care of institutionalized patients has in my experience been safe and effective. Seldom has a sustained increase in dosage been necessary, such as would point to development of tolerance; and most patients, with improvement or recovery, have lost their insomnia and have been able to discontinue hypnotics with little difficulty. Nevertheless, observations over the past fourteen years at a private sanatorium for the treatment of nervous and mental disorders show the infrequent occurrence of withdrawal symptoms. Similar observations have been reported in the psychiatric literature [1] but seem not to have gained wide attention. General discussions of the barbiturate "problem" [2] have failed to mention the symptoms about to be described.

Six patients at the sanatorium have had from one to three convulsive seizures following reduction or discontinuance of barbiturates. None of these had a previous history of seizures [3] and none had subsequent seizures during his time in the hospital or later, as far as is known to me. While previously reported seizures [1] have followed complete and sudden withdrawal of the drug, 4 of the 6 patients mentioned herein had convulsions in the course of gradual withdrawal. Three additional patients gave a history of seizures following the withdrawl of barbiturates prior to coming to the sanatorium, and 2 other instances from private practice have been brought to my attention.[4] Available data on patients seen at the sanatorium are given in the accompanying table.

1. Dunning, H. S.: Convulsions Following Withdrawal of Sedative Medication, Internat. Clin. **3**: 254 (Sept.) 1940. Kalinowsky, L. B.: Convulsions in Nonepileptic Patients on Withdrawal of Barbiturates, Alcohol and Other Drugs, Arch. Neurol. & Psychiat. **48**: 946-956 (Dec.) 1942. Brownstein, S. R., and Pacella, B. L.: Convulsions Following Abrupt Withdrawal of Barbiturate: Clinical and Electroencephalographic Studies, Psychiatric Quart. **17**: 112-122 (Jan.) 1943.

2. Tatum, A. L., and Seevers, M. H.: Theories of Drug Addiction, Physiol. Rev. **11**: 107-121 (April) 1931. Regulation of Sale of Barbiturates by Statute: Prepared by the Bureau of Legal Medicine and Legislation, American Medical Association, J. A. M. A. **114**: 2029-2036 (May 18) 1940. Hambourger, W.: Promiscuous Use of Barbiturates: Analysis of Hospital Data, ibid. **114**: 2013-2019 (May 18) 1940; Promiscuous Use of Barbiturates: Use in Suicides, ibid. **112**: 1340-1343 (April 8) 1939. Collins, G. W., and Leech, P. N.: Indispensable Uses of Narcotics: Chemistry of Barbital and Its Derivatives, ibid. **96**: 1869-1871 (May 30) 1931. Therapy with the Barbiturates, Eli Lilly and Company, Sedatives and Habit Formation, Dios Chemical Company, 1944.

3. Except 1 associated with barbiturate withdrawal.

4. (*a*) Howard, M. Q.: Personal communication to the author. (*b*) Belknap, E. L.: ibid.

Most of the patients here mentioned had gradually increased their consumption of barbiturates to much larger than average dosages and had continued it over periods of months or years. One convulsion occurred during reduction of sodium amytal following prolonged therapeutic sleep. While none of the convulsions has had any subsequent ill effect on the patient, these seizures have created a fear of possible idiopathic epilepsy or of some organic brain lesion and have caused concern to the patients, their relatives and their physicians. Knowledge of the possibility of this reaction as a result of barbiturate reduction or withdrawal is thus of importance in differential diagnosis. In 1 instance reported to me [3a] the occurrence of convulsions served to clinch the diagnosis of suspected barbiturate addiction in a woman who had previously denied it and whose husband was unaware of it. The manifestation is of interest, also, in confirming the existence of true physiologic addiction to barbiturate compounds.

Milwaukee Sanitarium, Wauwatosa 13.

Data on Convulsive Seizures Following the Withdrawal of Barbiturates

Case	Sex	Drug	Daily Dose: Grains	Daily Dose: Gm.	Duration	Reduction at Time of Convulsion	Number of Convulsions	Day of Convulsion After Reduction Begun	Comment
1. H. F. R.	♂	Neonal sodium Phenobarbital	18 1½	1.16 0.1	3 yrs.	To 6 grains (0.39 Gm.) sodium amytal	1	2d	Enlarged liver, myocardial degeneration; age 77
2. C. A.	♀	Pentobarbital sodium	18-24	1.16-1.55	2 mos.	To ?	3 in one day	?	History only of these convulsions; occurred prior to admission
		Pentobarbital sodium	12	0.78	3½ mos.	To 9 grains (0.58 Gm.)	2	2d and 5th	These convulsions while in sanatorium
3. C. E. E.	♂	Seconal sodium Phenobarbital	9 2	0.58 0.13	1½-2 yrs.	Seconal sodium to 3⅜ grains (0.24 Gm.) Phenobarbital to 0	1	3d	Wife had noted rare spells (during period of barbiturate consumption) when patient was unresponsive and eyes rolled
4. W. H.	♂	Pentobarbital sodium		?	Several months	To 0 (abrupt withdrawal)	1	3d	
5. R. B. S.	♀	Sodium amytal	48	3.11	2 wks.	To 9 grains (0.58 Gm.)	1	4th	In course of prolonged therapeutic sleep
6. B. D.	♀	Sodium amytal	15	0.97	Several months	To 3 grains (0.19 Gm.) for 7 days. To 0 for 1 day	1	8th	On diphenylhydantoin sodium 1½ grains (0.1 Gm.) daily from time of reduction; had had electroshock therapy 2 years previously
7. R. T. R.	♀	Seconal sodium	9	0.58	5 yrs.	To ?	2	?	History only of these convulsions; occurred before admission
8. S. R. E.	♂	Pentobarbital sodium	Up to 27	1.75	2+ yrs.	To ?	1	?	History only of these convulsions; occurred before admission
9. V. A. M.	♀	Phenobarbital Seconal sodium	15-18	? 0.97-1.16	5 yrs.	To 0 (abrupt withdrawal)	5	?	History only of these convulsions; occurred before admission; delirious 5 days after convulsions

CHRONIC PORPHYRIA COMPLICATED BY PREGNANCY

SIDNEY LINAS, M.D.; MILTON L. SOLOMON, M.D.
and
FRANK H. J. FIGGE, Ph.D.
Baltimore

Since there does not appear to be a case of chronic porphyria complicated by pregnancy reported in the literature, it was felt advisable to report a case which has recently been under our care. A preliminary report of this case was made by Taylor, Solomon, Weiland and Figge.[1]

REPORT OF CASE

History.—A white, married woman, aged 20, a native of Baltimore, was hospitalized several months prior to her pregnancy. At that time the diagnosis of chronic porphyria was definitely established. A full report on the history, physical examination, hospital course and progress of this patient appears in the previously cited article.

She was advised against becoming pregnant because of the unknown influence that pregnancy might have on the prognosis of the porphyria and because some types of porphyria appear to be inheritable. However, she apparently disregarded the advice, and in June 1945 she presented herself, at which time she was about two months pregnant. Her last menstrual period had occurred on April 20, 1945, making the estimated date of confinement Jan. 27, 1946. This patient was a primigravida and had been married for fifteen months.

Physical Examination.—The patient was a well developed and well nourished woman with a normal appearance except for cutaneous lesions. Her height was 5 feet 3 inches (160 cm.) and her weight 120 pounds (54.6 Kg.). Her nonpregnant weight was about 116 pounds (52.6 Kg.). Pelvic measurements were essentially normal. Vaginal examination revealed the uterus about the size of a six weeks pregnancy. The only positive observations on examination were the lesions of the skin that the patient exhibited. There were numerous vesicles on the hands and arms and some on the neck. Scattered over the arms, legs, neck and face were small, almost undetectable, brownish pigmented pockmarks from her earlier cutaneous lesions. At this time the patient was on the following treatment regimen: calcium lactate 40 grains (2.6 Gm.), sodium bicarbonate 80 grains (5.2 Gm.) and riboflavin 40 mg. by mouth daily. She also was receiving one ampule of Solu B[2] intramuscularly three times a week and 1 cc. of liver extract (15 U. S. P. units) intramuscularly once a week.

Course and Treatment.—The patient seemed somewhat improved in June 1945, and the administration of Solu B and liver extract was discontinued for one month. Obstetrically, the pregnancy progressed normally, but in July 1945 she began to show a decided exacerbation and extension of the cutaneous lesions. New lesions appeared on the arms, legs, neck and face (exposed surfaces).

Intense itching was present, and some of the lesions were secondarily infected, apparently from scratching. There was pronounced edema of the ankles, and she complained of frequent cramps throughout both legs.

Aided by grants from the Anna Fuller Fund and the Donner Foundation.

From the West Baltimore General Hospital and the University of Maryland School of Medicine.

1. Taylor, I. J.; Solomon, M. L.; Weiland, G. S., and Figge, F. J. H.: Chronic Porphyria, J. A. M. A. **131**: 26 (May 4) 1946.

2. Solu B (The Upjohn Company) is a mixture of thiamine hydrochloride 10 mg., riboflavin 10 mg., pyridoxine hydrochloride 5 mg., calcium pantothenate 50 mg. and nicotinamide 250 mg. in powder form for injection after proper solution has been effected.

By August 1945 the lesions of the skin were much worse and showed more extensive infection, in spite of the previously mentioned therapy and in addition, the use of a skin lotion containing tannic acid, the avoidance of exposure to sunlight and the constant wearing of black clothes. (See photograph in previous report.[1]) Because of the progression of the lesions and the hypothetic possibility of transmission of the disease to the offspring through heredity, interruption of the pregnancy at this point was seriously considered and discussed. In view of the fact that the relationship of pregnancy to chronic porphyria was unknown, and since the strict adherence of the patient to the treatment regimen and the advice given was questioned, it was decided to intensify the treatment and to carry on the pregnancy as far as possible, with the patient under extremely close observation.

When the original porphyrin determinations were made, the patient had been excreting 1,200 to 1,600 micrograms of porphyrin a day. This rate of excretion was continued for almost a year, though it had dropped to approximately 800 to 1,000 micrograms a day with therapy. It increased again during pregnancy to 1,200 micrograms in August 1945. At this time the following therapeutic schedule was established: calcium lactate 40 grains (2.6 Gm.) and sodium bicarbonate 80 grains (5.2 Gm.) by mouth

Patient on June 27, 1946 showing much improvement of cutaneous lesions. (Compare with photograph in previous report.[1])

daily. She also received riboflavin 20 mg. every four hours, ascorbic acid 1,000 mg. every four hours and nicotinamide 100 mg. twice daily orally. The intramuscular injection of liver extract was discontinued, and she was given one ampule of Solu B intramuscularly twice weekly. An ointment containing penicillin was used for the lesions of the skin.

The patient felt subjectively better on this regimen, but new lesions continued to appear while the old ones were healing and leaving pigmented areas. This condition continued throughout the remainder of pregnancy. The lesions became secondarily infected from scratching and healed slowly. The penicillin afforded some relief.

In December 1945 she showed a moderate, diffuse, soft enlargement of the thyroid without nodules that could be palpated. Thyrotoxic signs were not present. Her pulse rate remained at 80 to 86 per minute. The blood pressure was 110 to 120 mm. of mercury systolic and 60 to 80 mm. of mercury diastolic. The pregnancy progressed entirely uneventfully except for a slightly excessive gain in weight, a total of 36 pounds (16.6 Kg.). Urinalysis remained negative for albumin and sugar. At the end of pregnancy the patient was still excreting 1,200 micrograms of porphyrin a day.

The patient went into labor spontaneously on Jan. 30, 1946. Labor progressed normally. Seconal sodium and meperidine hydrochloride (Demerol hydrochloride) were used for analgesia. Artificial puncture of the membranes was performed in order to obtain amniotic fluid for study. This fluid was darker than could be accounted for by the small amount of meconium present in it. It contained large amounts of porphyrin, but this was not determined quantitatively because normal amniotic fluid contains high concentrations of coproporphyrin I. This is thought to arise from meconium and varies greatly in different cases. After a total labor of nineteen hours and five minutes, the patient was delivered of a live male child under gas-oxygen-ether anesthesia by low forceps from the right occipito-anterior position after a preliminary mediolateral episiotomy. The baby cried after one minute of mild resuscitation and appeared to be normal. The placenta separated spontaneously and showed fairly extensive diffuse fibrosis. The placenta contained many calcareous deposits which were brilliantly red fluorescent under near ultraviolet light.

The puerperium was entirely afebrile. All medication was discontinued on admission to the hospital. The only medication the patient received subsequent to delivery was ergonovine maleate $\frac{1}{320}$ grain (0.0002 Gm.) every four hours for twenty-four hours and ferrous sulfate 5 grains (0.324 Gm.) three times a day by mouth. Within forty-eight hours after delivery the lesions on the face and neck showed much improvement. The remaining lesions began slowly to regress and dry up, leaving brownish pigmented areas. The milk was examined spectroscopically at this time, and coproporphyrin was found to be present, but the amount of milk available was too small for a quantitative determination.

The baby was not allowed to be breast fed since it was considered advisable to eliminate this source of porphyrin and also to supply the mother with as much rest as possible. The child weighed 7 pounds 15½ ounces (3,614 Gm.) at birth and 7 pounds 5 ounces (3,317 Gm.) on discharge from the hospital. The urine of the baby was collected for the first three days after birth. This collected specimen contained sufficient porphyrin to be evident spectroscopically and to form a red fluorescent precipitate. This disappeared by the third day.

Mother and baby were discharged from the hospital on Feb. 8, 1946.

Laboratory Observations.—Examination of the blood on Jan. 31, 1946 showed a hemoglobin of 62 per cent. On Feb. 1, 1946 examination of the blood revealed 70 per cent hemoglobin with a red cell count of 3,810,000 and a white cell count of 13,900 with 72 per cent neutrophils, 20 per cent lymphocytes, 2 per cent monocytes, 2 per cent eosinophils and 4 per cent stab forms. The blood cholesterol was 220 mg. per hundred cubic centimeters. The icterus index was 5 and the direct and indirect van den Bergh reaction was negative. Other determinations on the blood showed: uric acid 3 mg., urea nitrogen 15 mg., urea 32.1 mg. and serum calcium 10.5 mg. per hundred cubic centimeters. The total protein was 7.15 Gm., the albumin 4.4 Gm., and the globulin 2.75 Gm. per hundred cubic centimeters of blood, making a ratio of 1.6. The Eagle flocculation test was negative; the cephalin was 1 plus. The sulfobromophthalein test revealed 2 per cent retention with 5 mg. of the dye per kilogram of body weight, a blood sample being withdrawn in forty-five minutes.

Subsequent Course.—Since discharge from the hospital the patient has continued to show subjective and objective improvement. The majority of the cutaneous lesions have cleared but have left brownish, pigmented, scarred areas. At the present time she is approximately seven months post partum and has not shown exacerbations of the porphyria. New lesions have appeared from time to time on the exposed surfaces of the skin when the patient is exposed to bright sunlight, but these lesions have been few in number and clear up rapidly. The patient has learned to avoid bright sunlight as much as possible. The only medicament which she has received since delivery, and which she is still taking at the present time, has been ferrous sulfate 10 grains (0.65 Gm.) three times a day. She has carried on her daily household duties in normal fashion; she feels and looks well. The baby has developed normally and has shown no evidence of porphyria. Examination of the patient's urine at three intervals since the birth of the child shows that the porphyria has progressively decreased until at present she is excreting about 400 micrograms of urinary porphyrin a day. This is approximately four times the normal amount.

SUMMARY

A case of chronic porphyria complicated by pregnancy in a woman aged 20 has been presented. During pregnancy there was an exacerbation of her cutaneous lesions and porphyrin excretion, both of which improved rapidly after delivery. The pregnancy was unaffected by the chronic porphyria, and the offspring seems normal as far as can be determined. We would like to be able to make a definite statement in regard to the effect of pregnancy on chronic porphyria, but from our observation in the reported case we cannot definitely say that pregnancy is or is not harmful to the patient with chronic porphyria. The spectacular improvement which started immediately post partum and which has continued for several months makes it appear that the total experience has had a beneficial influence on the patient. This, and the fact that the child appears perfectly normal, would lead one to the conclusion that chronic porphyria is not an indication for the interruption of pregnancy.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following statement. AUSTIN SMITH, M.D., *Secretary.*

THE STATUS OF METHIONINE IN THE PREVENTION AND TREATMENT OF LIVER INJURY

A manufacturer has presented a brand of methionine to the Council for inclusion in New and Nonofficial Remedies. The conditions for which methionine has been reported to be beneficial include its use in the prevention and treatment of liver injury due to poisonous agents such as arsenic, chloroform, carbon tetrachloride and trinitrotoluene. In addition, the use of methionine has been recommended in the treatment of eclampsia, shock, infectious hepatitis and cirrhosis of the liver. The Council has reviewed the available evidence with regard to the value of methionine in these conditions and feels that, although this drug offers some therapeutic promise, further work is necessary before the claims of the manufacturers may be considered to be established.

Various investigators [1] have presented evidence based on animal experiments that liver injury, particularly fatty infiltration, may be produced by dietary deficiencies. Best and Rideout [2] suggested choline as the necessary constituent of the diet to prevent fatty changes of the liver.

Certain chemical agents produce pathologic lesions in the livers of experimental animals closely resembling those seen in human beings with portal cirrhosis. Miller, Ross and Whipple [3] reported that either methionine or cystine would protect dogs against liver damage produced by chloroform. György and Goldblatt,[4] on the other hand, showed that in rats on a low protein diet necrosis or cirrhosis of the liver would develop which could be partially prevented by administration of choline but which was accentuated by the feeding of cystine. Addition of choline or yeast to the cystine diet prevented the liver changes.

Daft, Sebrell and Lillie [5] confirmed the work of György and Goldblatt and found that some protection to the livers of their animals was afforded by addition of choline, methionine and casein. It was concluded by György and Goldblatt [6] that the cirrhosis produced in animals by a low protein diet could be prevented by a combination of choline and cystine or by methionine alone.

Drill and Loomis [7] have shown that methionine feeding does not decrease the liver damage resulting from carbon tetrachloride poisoning in dogs maintained on a normal protein intake of 20 per cent or 41 per cent casein. In protein-depleted dogs methionine appeared to be responsible for a decrease in the degree of liver damage following carbon tetrachloride poisoning.

It is to be emphasized, however, that the dietary cirrhosis seen in animals is not histologically the same as portal cirrhosis in man [8] and that the animal experiments discussed here, while encouraging, need clinical confirmation by carefully controlled investigations on human patients.

Methionine has been used in the treatment of "postarsenical" liver damage with equivocal results. Beattie and Marshall [9] reported that methionine and cystine would protect patients against liver damage due to arsphenamine; however, critical examination of their data shows that, although the onset may have been delayed slightly by the treatment, the patients did have liver damage. The experiments were inadequately controlled and have been criticized by Peters and his associates.[10]

There is no evidence for the value of methionine in eclampsia. A thesis by Rinehart [11] suggests, but does not prove, that this toxemia may be associated with inadequate protein intake. On the basis of this thesis the manufacturers who presented methionine to the Council have suggested that this amino acid will prevent eclamptogenic toxemia.

The clinical evidence for the usefulness of methionine in the treatment of liver injury due to chloroform, carbon tetrachloride and trinitrotoluene is on slightly firmer ground. Beattie and his associates [12] reported 1 case of acute carbon tetrachloride poisoning in which recovery appeared to be influenced by massive doses of methionine. Eddy [13] has reported a few cases of carbon tetrachloride poisoning treated with a high protein, low fat diet plus 6 to 12 Gm. of methionine daily. No control observations were made, and it is not possible to attribute the beneficial results to the administration of methionine alone, since the diet used is known to have a beneficial action. The same criticism may be made of Eddy's later report [14] on methionine treatment of trimitrotoluene poisoning.

Peters and Croft [15] have suggested the use of methionine for patients with severe burns, since it is known that liver damage frequently occurs in such instances. However, no clinical investigations were reported and their conclusions were based on partially controlled animal experiments.

Although the manufacturers of methionine suggest its use in the treatment of infectious hepatitis, Wilson, Pollock and Harris [16] reported no significant effect on the severity or duration of the disease in patients treated with methionine. A member of the Council who had extensive experience with methionine and infectious hepatitis in the recent war also points out that methionine could not be demonstrated to affect the course of the disease.

The paucity of controlled clinical evidence on the value of methionine in the treatment or prevention of liver injury leads the Council to the conclusion that no claims for this product may be recognized at this time; but in view of the encouraging animal experiments, careful clinical trial of this agent by competent investigators should be made. Until further convincing evidence of the usefulness of methionine in liver disease is available, the Council has deferred acceptance of brands for inclusion in New and Nonofficial Remedies.

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SATURDAY, JANUARY 11, 1947

DEATHS OF PHYSICIANS IN 1946

The obituaries of 3,358 physicians were published in THE JOURNAL during 1946. The American Medical Directory Report Service recorded 3,312 deaths in the United States, possessions and temporary foreign. In addition approximately 200 notices of deaths had been received but not yet published, giving a total of 3,558 for general consideration. The present analysis, however, is concerned only with the 3,358 deaths published.

Age.—The average age at death was 66.1 years as compared with 65.3 in 1945. Five physicians died between the ages of 20 and 24, 43 between 25 and 29, 70 between 30 and 34, 99 between 35 and 39, 111 between 40 and 44, 132 between 45 and 49, 169 between 50 and 54, 283 between 55 and 59, 377 between 60 and 64, 525 between 65 and 69, 584 between 70 and 74, 452 between 75 and 79, 290 between 80 and 84, 158 between 85 and 89, 50 between 90 and 94 and 6 between 95 and 99, and of the 4 who had reached 100, 1 was 105 years of age.

Causes.—Heart disease remains the leading cause of death among physicians. With primary causes and contributory factors included in the general statistics, coronary thrombosis and occlusion led the heart group with a total of 738; 283 deaths occurred in the ages between 60 and 69. Diseases of the myocardium and pericardium accounted for 123 deaths, angina pectoris and other coronary diseases 106, chronic valvular and rheumatic heart diseases 28, subacute bacterial endocarditis (except rheumatic fever) 7 and other diseases of the heart 375.

Cerebral hemorrhage, thrombosis and embolism accounted for 404 deaths, arteriosclerosis for 185 and cardiovascular diseases for 91. Cancer and tumors were responsible for 352 deaths, 143 of which were classified under cancer of the gastrointestinal tract. Of 199 deaths ascribed to pneumonia, 13 were due to atypical or virus pneumonia. Tuberculosis caused 31 deaths, asthma 10, bronchitis and pleurisy 5, and other diseases of the respiratory system 31. Chronic nephritis and uremia accounted for 111 deaths and acute nephritis for 12. Diseases of the circulatory system caused 72 deaths, diabetes 46, cirrhosis of the liver 35 and other diseases of the liver 3, Hodgkin's disease and leukemia 32 and other diseases of the blood 9, diseases of the nervous system 27, diseases of the prostate 21, pulmonary embolism and thrombosis 19, peptic ulcer (ulcer of the stomach and duodenum) 16, aneurysm 13, influenza 12, diseases of the gallbladder, bile duct and cholecystitis 11, diseases of the spinal cord and peritonitis 10 each, appendicitis 6, diseases of the brain 5, encephalitis, meningitis, pernicious anemia and chronic arthritis 4 each, hernia, mental disease, syphilis, abscess, other infectious diseases, diseases of the bones and organs of locomotion and diseases of the skin 3 each, bacteremia, septicemia and pyemia, alcoholism and epidemic hepatitis 3 each, amebic dysentery 2, and rheumatic fever, poliomyelitis and trichinosis 1 each. Twenty-one deaths followed an operation. Senility was returned as the cause in 29 instances, while the cause of death was ill defined in 7. There were 62 deaths for which the cause was not obtained.

Suicides and Homicides.—Significant is the total of 55 suicides as compared with the 25 recorded for 1945. Twenty-four were attributed to bullet wounds, 9 to drugs, 5 each to cut arteries and poison, 2 each to jumping, illuminating gas, hanging and strangulation, and 1 each to drowning and monoxide gas. The method was not reported in 1 death, and 1 physician threw himself under a train. Of the 6 homicides shooting was the method used in 5, and 1 physician died of injuries received when struck by the husband of a patient.

Accidental Deaths.—Of the 130 accidental deaths, automobiles were involved in 55. One automobile accident occurred in a collision with a train and 1 with a street car. Four deaths were attributed to x-ray accidents and complications. Of the unusual accidents 1 physician was killed by a bolt of lightning while playing golf, 1 of injuries received when he fell under the wheels of a mule drawn wagon, 1 when a tractor he was driving overturned and 1 when a broken power cable wire struck him over the head; 1 died in the La Salle Hotel fire.

Miscellaneous Positions.—Among the decedents were 274 who had been teachers in medical schools, of whom 122 had reached professorial status. There were 7 deans, 1 president of a high school, 1 vice president of a medical school, 1 teacher in a public school and 122 members of education boards. One hundred and sixty-nine had been health officers, 108 members of boards of health, 67 coroners, 51 mayors, 31 authors, 29 members of medical examining boards, 27 bank presidents, 27 legislators, 26 pharmacists, 16 editors, 12 missionaries, 8 dentists, 7 postmasters, 4 lawyers and 3 interns. Four physicians had served with the fire department and 8 with the police department. One had been deputy collector of internal revenue, 1 city

treasurer, 1 state health officer, 1 state commissioner of labor, 1 a Danish vice consul, 1 a vice consul at the Turkish capital, 1 a member of the Civil Service Board, 1 minister to Ecuador and 1 trustee of a college. Of the miscellaneous group 2 had been in the Boer War, 1 in the Boxer Rebellion, 2 in the Philippine Insurrection and 47 in the Spanish-American War. Five hundred and fifty had served during World War I, 2 each with the British navy and army, 2 with the Canadian army, 2 in the Russian imperial army and 1 each in the British Expeditionary Forces and the armies of France, Italy and Poland.

Association Officers.—Included among the decedents were 1 who had been Vice President of the American Medical Association, 1 charter member of a council, 4 chairmen of councils and 13 section officers. Thirty-four had been members of the House of Delegates and 1 Speaker of the House. There were 35 presidents of state medical societies, 4 secretaries of state societies and 216 who had been presidents of county medical societies.

Killed in Action

The 3,358 obituaries included 40 physicians who were killed in action during World War II and 128 who died while in military service. A number of those who were killed in action had first been reported missing in action. The following locations as those where injuries resulting in death occurred as noted in official reports: Asiatic area 8, Philippine Islands 7, China Sea 6, Germany 5, Pacific area 5, Italy 2, France 2 and 1 each at Formosa, Luzon, North African area, Okinawa and Tinian. Nine were reported as prisoners of war, and 1 was killed when a Japanese suicide plane crashed into an auxiliary hospital transport. Eleven died at ages between 25 and 29, 9 between 30 and 34, 13 between 35 and 39, 2 between 40 and 44, 3 between 45 and 49, 1 between 50 and 54, and 1 between 55 and 59.

Died While in Military Service

Of the 128 physicians who died while in military service, coronary thrombosis caused 19 of the 29 deaths attributed to various forms of heart disease. Airplane accidents caused 16 deaths and automobile accidents 9. Cancer was responsible for 10 deaths, 3 of which were brain tumors. The remaining deaths from miscellaneous causes included 1 from poliomyelitis, 1 from tsutsugamushi fever and 2 each from acute infectious hepatitis and spinal meningitis. One physician died following an operation, and causes were not obtained in 10 deaths. Gunshot wounds led the suicides with 8 deaths, poison 2 and illuminating gas, hanging and stab wound of the chest 1 each. Two died between the ages of 20 and 24, 17 between 25 and 29, 28 between 30 and 34, 29 between 35 and 39, 25 between 40 and 44, 10 between 45 and 49, 9 between 50 and 54, 3 between 55 and 59, 4 between 60 and 64, and 1 between 65 and 69.

Of the 5 U. S. Public Health Service officers included in the general group of 3,358 deaths, 1 aged 39 was killed in action in the China Sea, and 1 aged 37 died of avitaminosis in Japan while a prisoner of war.

The 40 deaths classified as killed in action give an average age of 35.2, while the average for the 128 who died while in military service is 42.8. Combining the two, an average of 37.7 is recorded. Deducting this group from the general total of 3,358, an average of 67.5 is reached. Caution should be exercised in the interpretation of these figures, since a number of these young physicians would have died from other causes had they remained in civilian life.

Since the outbreak of World War II on Dec. 7, 1941 THE JOURNAL has recorded the deaths of 257 physicians who were killed in action and 501 who died while in military service. Reports still being received by THE JOURNAL indicate that the aggregate total of 758 military deaths among physicians will be greatly augmented when the complete statistics are made available through official military channels.

A NEW SURVEY OF MEDICAL EDUCATION

On recommendation of the Council on Medical Education and Hospitals of the American Medical Association, the Board of Trustees has authorized a new complete survey of the medical schools. The American Medical Association will undertake the entire financial responsibility for the survey. However, a collaborative effort with the Association of American Medical Colleges and the individual colleges is planned, so that the project can achieve the end of improved medical education in this country.

Ten years have passed since the last previous complete survey was made, under the direction of H. G. Weiskotten, now chairman of the Council. In the meantime there have been tremendous impacts on the entire structure of medical education, during the troubled war years and in the present era of reconversion to peacetime education. In the light of recent advances in medical knowledge and the nature of medical care a careful reevaluation of the curriculum is needed. Financially many schools are facing a crisis, since the increased income of the war years will be drastically reduced unless supplemented by funds from endowment, state or other sources. There is need for a thoroughgoing analysis of the educational resources of our medical schools as related to student enrolments.

Much general attention has been given to the two major surveys of the past: that of Abraham Flexner nearly forty years ago, and that of H. G. Weiskotten a decade ago. Yet the program of surveying individual medical schools and assisting them to improve has gone on year after year under the auspices of the Council and the Association of American Medical Colleges. Valuable though this continuous program has been,

it must be supplemented at opportune times by complete surveys of all schools.

The aim of the survey will be that which has motivated every activity of the Council in the past: to improve medical education and to render all assistance to medical schools to improve themselves, so that the quality of medical care in this country will continue to improve and the position of world leadership in medical education occupied by the schools of this country will be maintained and strengthened.

MORE NURSES NEEDED

Physicians need not be told that there is a "nurse shortage." Although more professional nurses are available today in the United States than at any time in the past, the supply has not been able to meet the demand. The National Nursing Council's Committee on Statistical Research estimates the deficit in August 1946 as 41,000.

A large proportion of this year's graduates have indicated that they expect to take hospital positions. The student nurses enrolled under the U. S. Cadet Nurse Corps program are only now beginning to reach graduation. Nevertheless the shortage of graduate nurses may prevail at least until 1949, since admissions to schools of nursing during this year have been lower than at any time in the past ten years. Only 30,899 student nurses were admitted in 1946, compared with 56,567 in 1945. Among the reasons cited are the competition of other occupations offering greater apparent satisfactions, the removal of wartime emotional and patriotic pressures, and the ending of Bolton act funds for nursing education.

The physician perhaps more than any other one person is likely to be consulted when a young woman thinks about entering the nursing profession. His aid is needed to encourage suitable candidates to enter an acceptable school of nursing. New drugs and new treatments often depend for their success on skilled nursing. A twenty-four hour span in a large hospital revealed, for instance, 58 surgical operations, 52 patients on the critical list, 12 babies born, 20 blood transfusions, 84 intravenous infusions, 141 streptomycin injections and 1,064 penicillin injections. The physicians who carry responsibility for these patients must have at their elbows professional nurses who act swiftly and intelligently.

Recent studies of the opinions of patients concerning nurses indicate that most people have high ideals of what the nurse should represent and feel more than normally injured and disappointed when she fails to measure up to them.

Employment conditions in nursing are gradually being improved as nurses, physicians and hospital administrators cooperate to secure better practices. Long hours and short pay were accepted as part of their lot by many nurses of an earlier generation. Offices, industries and public health nursing organizations which have been able to offer a more reasonable working day than some hospitals have accordingly attracted many nurses—some of them married or with domestic responsibilities—who might have preferred hospital service if the hours had been equally favorable. When hospitals have inaugurated a five day week of forty hours the shortage has become immediately lessened.

Many of the housekeeping and less skilled kinds of manual work which some nurses have done because of lack of other workers are gradually being assigned elsewhere. More practical nurses, well trained and state licensed, more orderlies, aides, ward maids and attendants are needed in the complex hospital world. Much of the distress about "nurse shortages" actually springs from a shortage of other types of personnel. The war demonstrated to physicians and nurses how much could be done, under supervision, by nurses' aides and other helpers. This is one of the conclusions formed from war experience that the medical profession will undoubtedly want to apply in civilian life. With its wider adoption, another block will be removed from the high school graduate's vision of professional nursing as a challenging occupation.

THE LABILITY OF BONE

The physical characteristics of bone are more obvious than its metabolic activity. The fact that bone is hard and rigid and appears so admirably to fulfil its mechanical functions is likely to turn attention from its capacity as a labile reservoir of mineral salts. Long before actual experimental demonstration the pathologist was aware of such abnormalities of mineralization or of decalcification as rickets, scurvy, osteitis fibrosa cystica and osteoporosis. More than a decade ago it was demonstrated [1] that restriction of experimental animals to a salt poor ration not only reduced the proportion of total bone ash but actually altered the chemical composition of the salt deposited in the growing skeleton. The mobilization of minerals from the skeleton is influenced by certain of the hormones. The thyroid hormones have been used in the removal of lead from the body after lead poisoning; the heavy metal appears to be mobilized from the bone along with the calcium phosphate with which it was deposited. Again, the hormone of the parathyroid glands has a definite effect on bone calcium; deficiency of this substance results in hypocalcemia and a resultant tetany, whereas an overproduction of the hormone produces hypercalcemia and net losses of calcium and phosphorus, which salts come from the skeleton. The estrogenic hormones bring about a pronounced shift of bone salts from

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the symphysis pubis [2] to the long bones in certain species,[3] with the result that the breaking strength of these leg bones is greatly increased [4] and the chemical composition of the bone salts is altered.[5] Purely physical evidence of the intense activity in the femur as a result of the administration of estrogens has recently been reported;[6] the x-ray diffractograms of sections of these bones show complete disorientation of bone salt crystals in the cortex. The same method of study has indicated that the faulty mineralization of the epiphysis in rickets is characterized by disorientation of the bone salt crystals [7] and that this abnormal structure persists after clinical healing is complete.[8] By means of a number of different chemical and physical experimental approaches it has been demonstrated that the skeleton is surprisingly labile: bone salts can be withdrawn from this reservoir under a variety of influences as well as deposited when circumstances are favorable. This fundamental concept has helped to explain certain clinical conditions and should be kept in mind in the therapeutic and nutritional approach to medical problems.

Current Comment

CANCER TREATMENTS FROM RUSSIA

The KR treatment,[1] named after its originators Nina Klyueva and Georgi Roskin, is now being tested in the treatment of human cancer in Moscow, Russia, by Trutnev, Lyampert and Egorov. The method is said to have little effect in cancer of the skin but to show promise in cancer of the throat, uterine cervix and breast. The preparation is made from dead protozoa of the species Trypanosoma cruzi. The material is said to localize in tumors and destroy them. This line of research followed the earlier observations of Roskin that living Trypanosoma cruzi after injection could destroy tumors in mice, although the animals themselves later succumbed to the infection. From the information at hand it is not possible to determine the biologic and chemical principles involved in the preparation and use of this material. Neither can its effectiveness be judged. In a second release [2] from the Russian Embassy brief mention of another method is said to be based on observations by Besredka. He found that a certain degree of immunity sometimes developed to transplanted tumors in animals when the transplants were made intracutaneously. Krasheninnikov used the method in 2 cases of human gastric cancer and 2 in which the type of primary tumor is not stated. He excised 1 to 2 Gm. of cancer tissue, wrapped it in a piece of omentum and transplanted it under the skin of the abdomen. It is stated that the transplant resolved promptly, as did also the primary tumor. It was believed that the transplanted cancer played the role of an autovaccine. The function of the omentum, presumably, was to supply cells for the fabrication of immune bodies. It will be, of course, some time before the value of this treatment can be judged. In order to answer satisfactorily questions in regard to these methods it is hoped that authoritative scientific information will soon become available.

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1. U. S. S. R. Information Bull. **6**: 2 (Oct. 23) 1946.
2. Ibid. **6**: 12 (Oct. 23) 1946.

FOCAL INFECTION

In his presidential address to the Institute of Medicine of Chicago Dr. Ernest E. Irons [1] discussed focal infection from the time when an Assyrian physician-priest in the seventh century told his king that the constitutional ailment from which he suffered was related to infected teeth to the revival of this doctrine by Frank Billings in the period from 1912 through 1916. Earlier investigators had arrived by empirical methods at the concept of a relationship between infection in the teeth and disturbances elsewhere in the body. With the coming of our modern era of bacteriology the infecting organism could be traced from its focus in the teeth or the throat or elsewhere in the body to tissues and organs far removed. Focal infection was no longer a theory but an established process. The difficulty of determining the exact nature of the relationship between a focus of infection and chronic arthritis is obviously far greater than prevails in tracing such an infection from a tooth to the heart or the kidney. Today the desirability of finding and removing local and often symptomless infection is generally recognized. However, the removal of great numbers of teeth or operations on the nose and throat on the chance of possible relationship between infection and chronic arthritis is no longer considered a scientific procedure. True, removal of chronic infections such as alveolar and peritonsillar abscesses may result in permanent cessation of arthritic attacks, but new technics in dental care and the development of specific chemotherapy and antibiotic therapy make available other approaches to the solution of this problem. In retrospect the intensive study carried on by Dr. Frank Billings and his associates, among them conspicuously Dr. Ernest Irons, produced not only observations of great importance in modern diagnosis and therapy but also concepts and procedures of significance in the control of other diseases. Among the chief of these by-products is the more careful examination of patients. Today the concept of focal infection has been integrated into the practice of medicine. One speaks no longer of the theory of focal infection; one recognizes focal infection as a definite pathologic condition requiring scientific diagnosis and treatment.

1. Irons, E. E.: The Theory of Focal Infection: Its Influence on the Practice of Medicine, Proc. Inst. Med. Chicago **16**: 265 (Dec. 15) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Jan. 6, 1947.

Need for Clarifying Lobbying Provisions of Reorganization Act

Provisions of the Reorganization Act may have to be amended by the 80th Congress to clarify the lobbying provisions. Already 205 individuals or organizations have registered, but many others have written to House and Senate officials to determine whether or not they should register. One lawyer suggested that a lobbyist should be defined as a person who approaches individual congressmen to enlist their support for or against pending bills. Parliamentary experts state that they did not believe that the lobbying provisions of the registration bill covered people whose only congressional activities involved testimony before committees, but they added that the provisions were not clear.

Penicillin Removed From All Distribution Control

The Civilian Production Administration has announced that penicillin has been freed from all distribution control. This action was taken because production is now adequate for all domestic and export requirements. Production reached 2.7 trillion Oxford units in October, compared with 675 billion units in October 1945 and 230 billion units in October 1944. Higher production was attributed to introduction of a new mold strain. The drug has been under some degree of control ever since 80 per cent of the meager initial output was first channeled to the armed forces in July 1943.

Army and Navy Merge Their Drive Against Vice

Although merger of the armed forces, which President Truman is expected to seek in the 80th Congress, still encounters opposition, the Army and Navy have joined hands in the "reduction and suppression of conditions inimical to the morals and welfare of service personnel." The objective of this merged activity will be to carry out the eight point program for the "repression of prostitution" in and around military establishments decided on last April.

Dr. James L. Hall to Resume Private Practice

Dr. James L. Hall, superintendent of Freedman's Hospital, has resigned to return to Chicago to resume private practice. Before coming to Washington in 1940 as professor of medicine at Howard University College of Medicine and chief of staff at Freedmen's, Dr. Hall had occupied positions on the staff of the Chicago Free Dispensary, Provident Hospital, Chicago, and as director of the Max Epstein Clinic.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Orthopedic Surgeons, Chicago, Jan. 25-30. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

Council on Medical Service

SEAL OF ACCEPTANCE—COUNCIL ON MEDICAL SERVICE

At the last meeting of the members of the Council on Medical Service, the Council's Seal of Acceptance was granted to Louisiana Physicians Service, Inc., New Orleans; New Hampshire-Vermont Physicians Service, Concord, N. H., and the twenty-three member bureaus of the Washington State Medical Bureau. Final action on six additional applications was postponed. This brings to fifty-two the number of plans granted the right to use the seal.

Louisiana Physicians Service, Inc., is a statewide plan sponsored by the Louisiana State Medical Society with offices in the Tulane Building, New Orleans. Mr. Frank Lais Jr. is the executive director.

New Hampshire-Vermont Physicians Service is the result of the merging of New Hampshire Physicians Service, Concord, N. H., with Vermont Physicians Service, Rutland, Vt. The executive offices are located at Concord and the Executive Director is Mr. R. S. Spaulding. This is the first plan sponsored by the medical profession which covers the population of the two states under a single administrative office.

The twenty-three member bureaus of the Washington State Bureau are: Chelan County Medical Service Corporation, Wenatchee; Clallam County Medical Service, Corporation, Port Angeles; Clark County Medical Service Corporation, Vancouver; Columbia Medical Service Corporation, Pasco; Cowlitz County Medical Service Corporation, Longview; Grant County Medical Service Corporation, Coulee Dam; Grays Harbor County Medical Service Corporation, Aberdeen; Jefferson County Medical Service Corporation, Port Townsend; King County Medical Service Corporation, Seattle; Kitsap County Medical-Dental Business Bureau, Bremerton; Kittitas County Medical Service Corporation, Ellensburg; Lewis County Medical Service Corporation, Chehalis; Mason County Medical Service Corporation, Shelton; Okanogan County Medical Service Corporation, Okanogan; Pacific County Medical Service Corporation, Raymond; Pierce County Industrial Medical Bureau, Tacoma; Skagit County Medical Bureau, Mount Vernon; Snohomish County Physicians Corporation, Everett; Medical Service Corporation of Spokane County, Spokane; Thurston County Medical Service Corporation, Olympia; Walla Walla Valley Medical Service Corporation, Walla Walla; Physicians and Dentists, Inc., Bellingham, and Yakima Medical Service Association, Yakima.

The standards under which a plan is granted the Seal of Acceptance require that it must first have the approval of the state medical society or, if local, it must be approved by the local medical society in the area in which it operates. The members of the medical profession must assume responsibility for the medical services included in the benefits. The plan should have no regulation which restricts free choice of a qualified doctor of medicine who is practicing in the locality covered by the plan and who is willing to give service under the conditions established. The method of giving the service must retain the personal, confidential relationship between the patient and the physician. These and other qualifications must be met by plans seeking the right to use the Council's seal.

Of special interest regarding prepayment medical care plans on a nationwide basis is the fact that many firms with a large number of employees have expressed a desire to deal exclusively with plans which merit the Council's Seal of Acceptance.

GOVERNMENT SERVICES

VETERANS ADMINISTRATION

ADDITIONAL TRAINING UNDER THE VOCATIONAL REHABILITATION ACT

Some disabled veterans who need more than four years of training to reach their occupational objectives may be able to take additional training under the Vocational Rehabilitation Act. The Veterans Administration states that veterans so severely disabled that no course of training will restore them to employability in four years, and those who lose time in their courses because of their health or other personal circumstances beyond their control, are expected to be helped by this ruling. Provision also has been made for disabled veterans who started preprofessional courses before the war and who have since proved their suitability for their chosen profession but who still must have more than four years to prepare for it.

The ruling does not apply to any veterans in training under the G. I. bill whose eligibility is based on their length of service up to a maximum of forty-eight months of training. It will not affect the majority of disabled veterans enrolled under the Vocational Rehabilitation Act but only those in special circumstances.

Under this act the Veterans Administration is responsible for studying and testing the disabled veteran and helping him select an employment objective which is in line with his skill and suitable to his disability. The Veterans Administration then is responsible for planning and enrolling him in a course of rehabilitation training that will enable him to reach his objective and become employable, generally within the four year limit. VA pays tuition and fees, provides books and supplies and pays a subsistence allowance to give the disabled veteran a living income until he is employable again.

A disabled veteran who is found suited to a professional field such as medicine must have background and experience to show he had planned to go into that line and must have satisfactorily completed premedical courses before he became a veteran with sufficiently high grades to promise acceptance by a medical school. He must also show high promise of success in the field. If he meets these qualifications, the Veterans Administration may give him five years, or even more, of training under the Vocational Rehabilitation Act.

The way further has been left open for some veterans who cannot fill all those qualifications but want to keep their chosen objectives by taking part of their training at their own expense. If their background and experience indicate that they are qualified, the Veterans Administration may let them pay their own way long enough so that when they finally enroll under the Vocational Rehabilitation Act they have only four years or less to finish the course. VA warns, however, that the veteran who chooses this plan runs a danger, for if his physical condition changes materially while he is studying at his own expense he may no longer be in need of vocational rehabilitation when he wants it. Final decision for courses of more than four years rests with each VA regional manager acting on the written recommendation of a committee of his vocational rehabilitation, education and guidance specialists.

ENCEPHALOGRAPHY—TECHNICIANS NEEDED

The Veterans Administration has inaugurated a comprehensive program to train physicians and technicians in electroencephalography. The program is under the supervision of Dr. Frederic A. Gibbs of the University of Illinois. Training courses in this work up to two and one-half months, depending on previous experience, are being offered. Physicians interested in becoming associated with the Veterans Administration to train for this work may be detailed at once to the training course. This program is one of three nationwide programs now under way to implement existing specialists in the neuropsychiatry department. The other programs are in epilepsy and aphasia.

Technicians are given courses averaging six weeks at the Neuropsychiatric Institute of the University of Illinois, Chicago, and at the Veterans Administration Hospital, Hines, Ill. The courses for technicians are designed to equip them in the skill of using and maintaining standard instruments and to give them a basic understanding of encephalography. Basic salaries of technicians range from $2,168 to $2,394 a year, depending on experience. Dr. Paul R. Hawley, chief medical officer of the Veterans Administration, says that the positions for technicians are open to both men and women with or without experience.

Electroencephalography machines will be installed in all Veterans Administration hospitals of 1,000 beds or more and in the larger Veterans Administration mental hygiene clinics. Applicants for any of these positions should apply to the nearest Veterans Administration office.

ARMY OFFICERS LENT TO VETERANS ADMINISTRATION

The Army has taken constructive steps to give actual assistance to the veteran. In an address before the National Conference of Veterans Affairs, Washington, D. C., December 5, Secretary of War Robert P. Patterson said "To the Veterans Administration we have loaned as its chief one of our ablest officers, General Bradley, and we have made available other army officers to assist him. Today, in addition, there are more than eleven hundred army medical officers assigned to the Veterans Administration, as well as a small group of army doctors and nurses manning one Veterans Administration hospital until a VA staff can take over. So far we have turned over to the Veterans Administration twenty-four army hospitals, in most instances complete down to the last pair of slippers and dressing gown for the patients and to the last scalpel for the surgeon."

100,000 VETERANS' HOSPITAL BEDS

Authorized hospital capacity of the Veterans Administration has passed the 100,000 bed mark for the first time. The new record was set with the acquisition of six more army and navy hospitals in the program to provide beds for the increasing number of veterans who need hospitalization while VA's hospital construction project is in progress. The six recently acquired service hospitals are Cushing General, Framingham, Mass.; Fort Logan, Colo.; Billings General, Fort Harrison, Ind.; Newton D. Baker, Martinsburg, W. Va.; Moore General, Swannanoa, N. C., and the naval hospital at San Juan, Puerto Rico.

JEFFERSON BARRACKS HOSPITAL

Army engineers have awarded the architect-engineer contract for the Veterans Administration hospital at Jefferson Barracks, Missouri. The present hospital is a 597 bed general medical and surgical center, which, under the plans of the Veterans Administration, will be converted to a neuropsychiatric hospital and an additional 500 beds will be added.

PERSONAL

Dr. Charles W. Mayo of the Mayo Clinic, Rochester, Minn., has been appointed chairman of a special advisory group on the overall medical care for veterans. The group was appointed in compliance with public law 293, 79th Congress.

NAVY

RESERVE OFFICERS MAY RETURN TO ACTIVE DUTY

The Bureau of Medicine and Surgery has been authorized to recall to active duty, on a voluntary basis, reserve medical and dental officers now on inactive duty pending final action on applications for appointment to the Medical Corps of the regular Navy. Officers who volunteer will remain on active duty until such final action is taken on their applications. Under present regulations those officers are ineligible to apply for appointment to the regular Navy after the expiration of six months in an inactive duty status. By returning to active duty, reserve officers of the Medical and Dental Corps who have been in an inactive status beyond the six month limitation may regain their eligibility to file application for appointment to the regular Navy. Additional information on the procedure to be followed in applying for recall to duty may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

TWO HUNDRED RESERVE NURSES NEEDED NOW

The Bureau of Medicine and Surgery announced the immediate need for the return to duty of 200 Naval Reserve nurses now on inactive duty. Volunteers, who will be required to serve for a minimum of one year, will be returned to active duty with the same rank as that held at the time they became inactive. As a result of demobilization the nursing staffs at naval hospitals have been sharply reduced while the number of patients has remained substantially the same during the past several months. The services of 200 additional nurses are considered necessary to meet the problem for the next year. All inactive members of the Naval Reserve Nurse Corps interested in returning to duty are urged to apply as soon as possible to the Superintendent of the Nurse Corps, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

SIX PROMOTIONS TO REAR ADMIRAL

President Truman has approved the recommendations of the Navy selection board for the promotion of six medical corps officers to the rank of Rear Admiral. The medical officers recommended for promotion are: Morton D. Willcutts, Assistant Chief of the Bureau of Medicine and Surgery for Professional and Personnel Operations; Clarence J. Brown, Medical Officer in Command, Naval Hospital, St. Albans, N. Y.; Arthur H. Dearing, Medical Officer in Command, Naval Hospital, Oakland, Calif.; Paul M. Albright, Medical Officer in Command, Naval Hospital, Corona, Calif.; John C. Adams, Chief of Aviation Medicine Division, Bureau of Medicine and Surgery, and Carlton L. Andrus, Chief of Planning Division, Bureau of Medicine and Surgery.

NEW ORLEANS NAVAL HOSPITAL CLOSES

The U. S. Naval Hospital at New Orleans was disestablished as of November 15 on becoming surplus to the needs of the Bureau of Medicine and Surgery. It is said that consideration is being given to the transfer of this facility to the Veterans Administration.

PUBLIC HEALTH SERVICE

EXAMINATIONS FOR PUBLIC HEALTH SERVICE APPOINTMENTS

Examinations will be held early in 1947 for appointment to the Regular Corps of the United States Public Health Service. Seventy-five vacancies exist in grades of assistant and senior assistant scientist. Written examinations covering each candidate's particular field as well as related fields will be held April 14 and 15 at places mutually convenient to the applicant and the service. Oral examinations will be held February 13-April 9 in thirty cities throughout the United States.

Commissions are available to scientists trained in any of the following fields: bacteriology, mycology, parasitology, entomology, malacology, biology, chemistry, physiology, physics, statistics and psychologists and to milk and food specialists. Assignments will be in line with the individual's demonstrated ability and experience.

An applicant for the grade of assistant scientist must be a citizen of the United States, have had seven years of educational and professional training or experience, possess a certificate or diploma from an institution of recognized standing and be able to pass a physical examination given by a medical officer of the United States Public Health Service. The same requirements, plus an additional four years of training or experience, apply to those seeking the grade of senior assistant scientist.

Commissioned officers in the Regular Corps enjoy the same benefits and privileges as do officers of the Army, Navy or Marine Corps. The grade of assistant scientist is equal to that of first lieutenant in the Army. Annual pay, with allowance, for dependents, is $3,811. A senior assistant scientist ranks with a captain of the Army and draws, with allowances for dependents, $4,351 a year.

Public Health Service officers are entitled to full medical care and hospitalization for themselves and their families, including disability retirement at three-fourth's base pay. They receive thirty days' annual leave with pay. Periodic promotions are based on length of service and merit. The retirement age is 64.

Application forms may be obtained by writing the Surgeon General, Public Health Service, Washington 25, D. C.

MISCELLANEOUS

SALE OF SURPLUS SURGICAL SUTURES

Nationwide offerings of surplus surgical sutures on a sealed bid basis are being arranged by regions having large inventories, the War Assets Administration has announced. Various quantities of surgical sutures of all types, which were acquired by the government at a cost of about $3,500,000, will be offered to all buyers by War Assets Administration regional offices. Seven offices—Atlanta, Cincinnati, Denver, New York, Richmond, San Francisco and St. Louis—have been authorized to offer their entire inventories of sutures for sale at once. In addition, smaller quantities, which are stored in various other regions, will be combined to make up one or more additional offerings.

The surgical sutures are being segregated into three lots before being offered: (1) sutures made by Davis and Geck, Inc.; (2) those made by Johnson and Johnson, and (3) those made by all other manufacturers. Bids will be accepted on any one of the lots, any combination of lots or all three lots. Bids must be accompanied by a deposit of 10 per cent of the bid. Buyers must sign a contract to clear with the Food and Drug Administration before resale to assure that these sutures meet requirements of the Federal Food, Drug and Cosmetic Act.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Organize Graduate School of Medicine.—The College of Medical Evangelists, Loma Linda-Los Angeles, announces the organization of a graduate school of medicine giving courses on the graduate level and featuring the basic sciences as related to the major clinical specialties. The second course in the basic studies relating to surgery is now in progress. Nine month courses are also being offered in internal medicine and in obstetrics and gynecology. These basic science courses are planned primarily for physicians who are working toward certification by their respective American specialty boards.

Civil Service Examinations.—The California State Personnel Board has announced examinations for two state civil service positions. The examination for the first, chief, bureau of clinic diseases, will be February 1. Final date for filing application is January 30. The chief of the bureau, under administrative direction, plans, organizes, coordinates and directs the work of the staff of the bureau of chronic diseases in a program for prevention and control and for the study of public health aspects of chronic diseases, directs and interprets investigative projects, consults and advises provisional and local groups concerning programs for prevention of chronic diseases and addresses interested groups and prepares articles for publication. The salary range is from $535 to $655. The second position is that of senior public health analyst, with salary ranging from $280 to $340. The examination date is February 27 and the final date for filing application is February 6. The position does not call for a medical degree but for an education equivalent to graduation from college with courses in statistics. The senior public health analyst, under general direction, plans and supervises the work of junior public health analysts engaged in checking, tabulating, analyzing and interpreting morbidity and mortality data from public health records and in making other studies and health surveys. He assists in coordinating statistical activities and other procedures of the department of public health and also designs questionnaires. California residency is not required.

COLORADO

Personal.—Dr. Phineas J. Sparer, recently released from military service, has been named superintendent of the Sanatorium of the Jewish Consumptives Relief Society, Denver, which he has been serving as medical director.

Eastern Colorado Meeting.—At the regular meeting of the Eastern Colorado Medical Society in Burlington December 2, Dr. Edgar Durbin, Denver, gave a paper on "Shortcomings in Cardiac Diagnosis and Treatment"; Dr. Walter Kozak, Vandergrift, Pa., on "Urinalysis," and Dr. Harold M. Hayes, Burlington, on "Sedimentation Rate."

ILLINOIS

Record Birth Registration.—The Illinois Department of Health announced on December 20 a record breaking registration of live births in the third quarter of 1946 with 45,040 certificates filed. This number is 5,600 over the highest third quarter ever before recorded in Illinois. Births for the first nine months total 111,697 as compared with the 1945 figure of 98,204. Deaths associated with child bearing are at an all time low. Thus far a decrease of 15 per cent over the maternal death rate of 1945 has been recorded.

The Seventh Cancer Diagnostic Clinic.—The state director of public health, Dr. Roland R. Cross, has announced that a new state aided cancer diagnostic clinic was opened December 18 at the Marshall Browning Hospital of DuQuoin and that it was made possible through the cooperation of the Perry County Medical Society, the state department of health and the hospital authorities. This is the seventh to be established in the state, the others being in Chicago, Evanston, East St. Louis, Champaign, Rockford and Springfield. The purpose of these clinics is to provide expert assistance in the detection of cancer in its early stages. Each clinic is staffed by physicians qualified in the fields of surgery, internal medicine, x-ray and pathology.

Chicago

New Manager Takes Charge of World's Largest General Hospital.—Mr. Fred A. Hertwig on January 2 became warden of the Cook County Hospital, Chicago, succeeding Gen. Manus McCloskey. Among those present at the ceremony were William N. Erickson, president of the county board, and Dr. Karl A. Meyer, medical superintendent of county institutions. Mr. Hertwig, 48, previously was for many years manager of a hotel in Evanston.

Sanford R. Gifford Memorial Lecture.—The third annual Sanford R. Gifford Memorial Lecture will be presented under the auspices of the Chicago Ophthalmological Society on Monday, January 20, at the John B. Murphy Memorial Auditorium of the American College of Surgeons, 54 East Erie Street. Dr. Frederick C. Cordes, professor of ophthalmology, University of California Medical School, Berkeley-San Francisco, will present the lecture, which will be on "Types of Congenital Cataract."

Chicago Medical Society.—At the next meeting of the Chicago Medical Society, January 15, at the John B. Murphy Memorial Auditorium on East Erie Street, Dr. Willard M. Allen, professor of obstetrics and gynecology and head of the department, Washington University School of Medicine, St. Louis, will discuss "Functional Uterine Bleeding" and Dr. Laurence Randall, head of the section of obstetrics and gynecology, Mayo Clinic, Rochester, Minn., "Diagnosis and Treatment of Amenorrhea in Young Women."

Institute of Medicine.—Presentations by fellows of the Institute of Medicine of Chicago on recent contributions and current thought in the basic sciences and various branches of clinical medicine began January 10. Subsequent meetings will be held on the second and fourth Friday evenings of each month at the assembly room of the institute. They will be open without fee to all physicians and allied professional groups. Dr. Alvah L. Newcomb, associate in pediatrics, Northwestern University Medical School, and associate attending pediatrician, Children's Memorial Hospital, will open the series. His subject will be "Juvenile Diabetes."

INDIANA

Cancer Research.—Grants totaling $10,500 have been given to Indiana investigators by the American Cancer Society for projects in research on cancer, including among others two projects on mutations as they relate to cancer.

Personal.—Dr. Floyd T. Romberger, Lafayette, president of the Indiana Medical Society, addressed the sisters of St. Francis and the medical staff of St. Elizabeth Hospital, Lafayette, December 3.——Dr. Bert E. Ellis has been made president-elect of the Indianapolis Medical Society.——Dr. Charles E. Holland, Bloomington, has been appointed full time physician for the athletic team of Indiana University.

Countywide X-Ray Service.—The Lake County Tuberculosis Association and the James O. Parramore Hospital in connection with the Lake County Medical Society are conducting a countywide chest x-ray program. A new mobile x-ray unit has been purchased, and equipment will be installed in various communities in the county. Members of various groups in the county have been invited to appear for roentgenologic examination.

MISSOURI

Advisory Board to Los Alamos Project.—The Washington University School of Medicine, St. Louis, has concluded an agreement to advise on the health service and research carried on at the Los Alamos Project, Santa Fe, N. M., Charles Belknap, vice chancellor, Washington University, has announced. The medical advisory board consists of Dr. Philip Shaffer, distinguished service professor of biologic chemistry; Dr. Carl B. Moore, professor of internal medicine; Dr. Frank R. Bradley, director of Barnes Hospital; Dr. Otto Brandhorst, dean of the school of dentistry; Dr. Nathan Womack, associate professor of clinical surgery; Dr. James Nolan, assistant professor of obstetrics and gynecology, and Dr. Robert A. Moore, acting dean of the school of medicine. Dr. Norris Bradbury, Los Alamos Project director, and Col. Herbert Gee, commanding officer of the post, are ex officio members. The board will make recommendations for professional staff appointments on the medical service at Los Alamos. Other staff members of the school of medicine will be available for consultation to these groups. In return, some of the facilities of the Los Alamos Project will be available to qualified staff members of the school of medicine for research.

NEW YORK

Licenses Revoked.—The New York State Board of Medical Examiners has reported the following revocations of licenses, according to *Health News:*

Celano, Frank, 351 Madison Street, Westbury. Medical license issued through indorsement of his Maryland medical license and permitting him to practice medicine in the state of New York revoked, annulled and canceled as of Oct. 28, 1946.

Steuart, Frederick Charles, Sag Harbor, Long Island. Medical license to practice in the state of New York revoked, annulled and canceled as of Oct. 29, 1946.

Dr. Chant Goes to Johns Hopkins.—The board of health of Middletown recently gave a dinner to Dr. Harry L. Chant, state district health officer of Middletown, who is leaving the state service to become associate professor of public health at Johns Hopkins University, Baltimore. Dr. Chant graduated from the University of Buffalo School of Medicine in 1928, interned at St. Lukes Hospital Association, Jacksonville, Fla., and was resident physician at Buffalo City Hospital from 1929 to 1931.

Personal.—Dr. Jere J. McEvilly, Little Falls, has been appointed health officer of Little Falls to succeed Dr. Augustus B. Santry, who held the office for twenty-two years.——Dr. Charles A. Gordon, Brooklyn, has been appointed professor and head of the department of obstetrics and gynecology at the Long Island College of Medicine, Brooklyn, succeeding Dr. Alfred C. Beck, who retired after more than thirty years' service to the college.——Dr. Clark G. Rossman, Hudson, was guest of honor at a dinner, Sept. 25, 1946, given by the Columbia County Medical Society to mark his completion of fifty years in the practice of medicine.——Dr. John K. Miller, Albany, has been appointed associate director of the division of laboratories and research of the New York State Department of Health to succeed Dr. Mary B. Kirkbride, who retired July 1.——Dr. George Baehr was reelected president of the New York Academy of Medicine for a term of two years December 5.——Dr. James L. McCartney, Garden City, has been appointed consulting psychiatrist for the Great Neck Public Schools. Dr. McCartney, a veteran of the recent war, was for several years chief of the Division of Mental Hygiene of the State Department of Health, Connecticut.

New York City

Geriatrics Research Laboratory.—The city's first research laboratory devoted wholly to the study of geriatrics opened January 1 at the Brooklyn Hebrew Home and Hospital for Aged. It will be under the direction of the hospital's medical staff. The laboratories at the home and hospital were created by the Dora Brenner Research Fund.

New Society of Neurosurgery.—Twenty-four neurosurgeons who practice in the metropolitan area have recently formed the New York Society of Neurosurgeons. The organization is an outgrowth of a group of New York neurosurgeons who have been meeting informally at regular intervals since 1939. Dr. J. Lawrence Pool is president and Dr. Sidney W. Gross secretary.

Fourth Harvey Lecture.—Dr. Isaac Starr, professor of therapeutic research and dean of the medical faculty, University of Pennsylvania School of Medicine, will deliver the Fourth Harvey Lecture of the current series at the New York Academy of Medicine, New York, on January 16. Dr. Starr will speak on "The Ballistocardiograph: An Instrument for Clinical Research and Routine Clinical Diagnosis."

Anniversary of Health Department.—The eightieth anniversary of the foundation of the New York City Department of Health was celebrated at the Academy of Medicine, Nov. 6, 1946, when Dr. Israel Weinstein, city health commissioner, spoke on "Eighty Years of Public Health in New York City" and Dr. Harry S. Mustard, director, Columbia University School of Public Health, on the part which medical organizations and voluntary health agencies played in developing the activities of the health department.

Vaccination Required for All Dogs.—To stop the spread of rabies through the city the board of health decided early in December to require by law the vaccination of all dogs in the city. An amendment to the sanitary code would make it a misdemeanor to keep a dog unvaccinated against rabies, and violation of the amendment would be punishable by a $500 fine or imprisonment up to one year or both. Enforcement of the new amendment in the case of 300,000 licensed dogs in the city will be comparatively easy by merely requiring proof of vaccination to get a dog license. The spread of rabies has forced the board of health to put Queens, Brooklyn and Richmond under dog quarantine, and Health Commissioner Israel Weinstein believes that "it is only a question of time before infection will spread to Manhattan and the Bronx."

OHIO

Studies in Tropical Diseases.—The department of pharmacology, Western Reserve University School of Medicine, Cleveland, had received a grant of $16,500 from the United States Public Health Service to continue studies on tropical diseases begun during the war in that department.

Professor of Psychiatry Appointed.—Dr. Maurice Levine has been appointed professor and head of the department of psychiatry in the University of Cincinnati College of Medicine, according to Dr. Stanley Dorst, dean of the college. He will also be director of the psychiatry service of the Cincinnati General Hospital. Dr. Levine was an instructor in psychiatry at the Phipps Clinic, Johns Hopkins from 1929 to 1932 and a student of the Chicago Institute for Psychoanalysis from 1932 to 1936. He is a training analyst and a member of the faculty of the Chicago institute. He is also author of the book "Psychotherapy in Medical Practice."

PENNSYLVANIA

Establish Central Tuberculosis Register.—A chest x-ray survey of persons 15 years of age and over who live in Erie City and County reached the 80,000 figure Dec. 1, 1946. The survey is being participated in by the Erie County Health and Tuberculosis Association, the state department of health, the county medical society and official, voluntary, business and welfare organizations. At the annual dinner meeting of the Erie County Health and Tuberculosis Association, November 12, Dr. Edward Chamberlain, professor of radiology and roentgenology, Temple University School of Medicine, Philadelphia, emphasized the importance of thorough follow-up of findings coming out of the survey. Other features of the county's vigorous program include the establishment of a central tuberculosis case register, employment of a Negro health education worker, placing x-ray units in the two general hospitals in Erie and considerable improvement in the health education program.

VIRGINIA

Dr. Newbill Named Superintendent of Sanatorium.—Dr. Hugh Page Newbill took charge of DeJarnette Sanatorium, Staunton, January 1, succeeding Dr. J. S. DeJarnette, resigned. Dr. Newbill was assistant professor of neurology and psychiatry at the University of Virginia School of Medicine and was associated with the Davis Clinic of the University of Virginia Hospital at the time of his appointment.

Changes in Health Officers.—The State Department of Health of Virginia announced the appointment of Drs. J. C. Neale Jr., Norfolk, formerly assistant director of local health services, appointed director of local health services as of Nov. 1, 1946; Peyton M. Chichester, Abingdon, formerly assistant director of local health services, appointed acting director of the bureau of crippled children and tuberculosis outpatient service as of November 1; Jack B. Porterfield, Richmond, appointed assistant director of local health services as of November 1, and William A. Browne, Richmond, appointed director of communicable disease control as of December 1.

WEST VIRGINIA

Personal.—Dr. Norman L. Cardey, formerly of Winona, who served in the Army Medical Corps for over five years and was released from service in September 1946, is now serving a residency in surgery at the California Hospital in Los Angeles.

Diet Cards Available.—Nutritional feeding cards are being distributed by the state health department and the state nutrition committee for the use of physicians interested in infant and child feeding. The form adopted was recommended by a committee appointed by the state nutrition committee at a meeting early last year. According to Miss M. E. Ingoldsby, president of the state nutrition committee, the cards are being printed and distributed to meet the demand of physicians who desire to give them to their patients.

Cancer Research Funds Allotted.—West Virginia will receive between $20,000 and $30,000 for cancer control activities from a special appropriation of $2,500,000 now being distributed by the U. S. Public Health Service. The appropriation made during the closing days of the last session of

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Congress is being allocated to the various states on the basis of population and need. The amount of federal funds received by West Virginia will augment the state appropriation of $50,000 for the division of cancer control of the state health department. It will be used for furtherance of the educational program and aid in the establishment of tumor clinics and tissue diagnostic service for needy cancer patients and for the care of needy cancer patients if the prognosis is good. Federal funds will not be used for palliation or for terminal care of advanced cancer patients. The receipt of federal funds has provided for the expansion of the overall cancer program in this state. It has enabled the division of cancer control to authorize limited diagnostic studies in suspected cancer patients and increase active treatment for needy patients.

CANAL ZONE

Canal Zone Medical Society.—At the December meeting of the Medical Association of the Isthmian Canal Zone the following program was presented: Dr. Jesse C. Ellington, Ancon, "Revaccination as an Index of Immunity to Smallpox," and Dr. J. E. Elmendorf, New York, "A Preliminary Report on Field Experiments to Demonstrate Effectiveness of Various Methods of Malaria Control" (with slides).

GENERAL

Conference on Epilepsy.—The Association for Research in Nervous and Mental Disease joined the International League Against Epilepsy for the twenty-sixth annual meeting December 13 at the Hotel Waldorf-Astoria, New York. The subject of the conference was epilepsy. Dr. William G. Lennox, Boston, was chairman of the program committee.

Campaign for Funds to Fight Poliomyelitis.—The annual "March of Dimes" campaign conducted by the National Foundation For Infantile Paralysis to raise funds to continue the fight against epidemic poliomyelitis will be conducted throughout the country January 15-30. More than 1,000 radio stations will participate in the campaign, and various other means of bringing to the public the importance of this work have been organized.

American Academy of Allergy.—At the meeting of the American Academy of Allergy held in New York City November 25 to 27 the following officers were elected for the ensuing year: Dr. Will Cook Spain, New York, president; Dr. Karl D. Figley, Toledo, Ohio, vice president; Dr. Theodore L. Squier, Milwaukee, secretary, and Dr. Leo H. Criep, Pittsburgh, treasurer. One hundred and forty-four new members were elected. The academy at present consists of one hundred and seventy-one fellows and three hundred and forty-one members. The next meeting will be held in St. Louis December 15 to 17.

American Society of Electroencephalography.—The Eastern Association of Electroencephalographers last June requested representatives of the American Physiological Society, American Neurological Association, American Psychiatric Association and American Medical Association to form a council of seven members for the purpose of organizing the American Society of Electroencephalography. The council met in December 1946 in Boston and formed the American Society of Electroencephalography, with Herbert H. Jasper, Sc.D., Montreal, Canada, president; Dr. Frederick A. Gibbs, Chicago, vice president, and Dr. Robert S. Schwab, Boston, secretary.

Diabetes Association Aids Research.—An invitation to apply for funds to aid research in clinical and experimental diabetes is extended to medical graduates and workers in allied fields by the New York Diabetes Association. An application for the grant should contain a description of the project and the name of the laboratory or individual under whose guidance the work will be done and should have the approval of the head of the department in which the work is to be done. Applications should be filed on or before February 15 with Dr. Edward Tolstoi, chairman, Committee on Research, New York Diabetes Association, Inc., 2 East 103d Street, New York 29.

Frank Calderone Heads Commission of World Health Organization.—The Interim Commission of the World Health Organization, a special agency of the United Nations, has announced the appointment of Dr. Frank A. Calderone as director of its headquarters office being established in the Empire State Building, New York City. Dr. Calderone is a graduate of New York University College of Medicine, where he also taught pharmacology and preventive medicine. He received a degree in public health from the School of Hygiene, Johns Hopkins University, is a member of the New York County Medical Society, the Harvey Society, Alpha Omega Alpha and the American Public Health Association. He was with the New York City Health Department for ten years.

Meeting of Parasitologists.—The twenty-first annual meeting of the American Society of Parasitologists was held Dec. 26 to 28, 1946 at Harvard Medical School and also at the Statler Hotel, Boston. Among numerous papers read at the meeting were the following: The Occurrence of Small Strains of Endameba Histolytica in the Chicago Area; Studies on the Life Cycle and Viability of Leishmania Tropica; A Symposium on Trichomonas, and Methods of Testing Fabrics and Ointments to Determine Their Effectiveness as Barriers to Schistosome Cercariae. One afternoon was devoted to demonstrations and motion pictures on Sandfly Control and Schistosomiasis. The presidential address, entitled "This Wormy World," was delivered by Norman L. Stoll of the Rockefeller Institute for Medical Research, Princeton, N. J.

American Foundation for High Blood Pressure.—Creation of the American Foundation for High Blood Pressure to support and develop research in the field of high blood pressure and arteriosclerosis has been announced by Alva Bradley, chairman. Donald E. Hagaman, Cleveland, will take office in February as executive secretary. The board of scientific directors has been drawn from specialists in cardiovascular disease from the entire country. Funds raised on a national scale to finance research in the cause and cure of high blood pressure in American medical colleges, medical centers and hospitals is the objective of the foundation. Cost of the administration of the program has already been financed on a three year basis. While high blood pressure and arteriosclerosis account for a fourth of the deaths above the age of 40, funds for research have ranked at the bottom of the list among those available for research into major causes of incapacity and death, Mr. Bradley said.

Psychiatric Personnel Placement Service.—The activities of the Psychiatric Personnel Placement Service, jointly operated for the past year as an emergency placement program by the American Psychiatric Association and the National Committee for Mental Hygiene, have been taken over by the latter organization, 1790 Broadway, New York 19. Physicians seeking placement in positions or training in the field of psychiatry may still apply. Over nine hundred physicians have registered in the placement service since it began operating Dec. 11, 1945 for the purpose of giving advice and assistance to physicians in the armed forces who were interested in obtaining further training or to physicians in psychiatry on their return to civilian life. It is felt, however, that the emergency placement program has been completed but that the data relative to training and positions should be kept available to interested physicians. Complete files will be located in the offices of the National Committee for Mental Hygiene.

Southern Medical Association.—At the recent meeting of the Southern Medical Association in Miami, Fla., the following officers were elected: Dr. Lucien A. LeDoux, New Orleans, president, and Drs. Oscar B. Hunter, Washington, D. C., and Robert T. Spicer, Miami, vice presidents. The Association's medal for scientific research was presented to Dr. William H. Sebrell Jr., chief, Division of Physiology, National Institute of Health, Bethesda, Md., for his contributions to the study of nutrition and its effect on public health. Among the awards for scientific exhibits, the first one was made to Drs. Amos Christie and J. Cyril Peterson of Vanderbilt University School of Medicine, Nashville, Tenn., for their exhibit on pulmonary calcifications and histoplasmin sensitivity. The second award went to Dr. J. Brown Farrior, Tulane University School of Medicine, New Orleans, for his exhibit on ear surgery, and the third to Dr. Keith S. Grimson, Dr. George J. Baylin, Haywood M. Taylor, Ph.D., Dr. Frederick H. Hesser, Dr. Ralph W. Rundles and Dr. Robert C. Smith of Duke University School of Medicine, Durham, N. C., for their exhibit on vagotomy for peptic ulcer.

Paul Russell Awarded Walter Reed Medal.—The American Society of Tropical Medicine has awarded the Walter Reed Medal for 1946 for meritorious achievement in tropical medicine to Dr. Paul F. Russell of the International Health Division of the Rockefeller Foundation, now assigned to service in Venezuela. Dr. Russell was born in Boston, graduated from Cornell University Medical School in 1921 and received the degree of master of public health at Harvard in 1929. His first significant contribution to the field of malariology concerned "species control" in antimalaria campaigns. His studies on the transmission and epidemiology of malaria in the Philippines and his encouragement of the development of totaquine laid the foundation for an intelligent approach to the problem of malaria control. His studies in India on transmission clarified the epidemiology of malaria. At the beginning of World War II Dr. Russell returned to the United States, was commissioned a lieutenant colonel and was assigned to the Surgeon General's Office, where

he conceived the idea of forming malaria survey units and malaria control units, the organization and training of which he planned, later going to Algiers as director of the Allied School of Malaria and chief malariologist of the Allied forces in the North African Theater. He returned to the United States in 1944 and became chief of the Division of Parasitology at the Army Medical School, Washington, D. C., until his return to civilian life early in 1946. Dr. Russell's bibliography consists of more than 120 scientific papers.

Grants for Research in Endocrinology.—The committee on research in endocrinology, National Research Council, announces that requests for grants-in-aid during the fiscal year July 1, 1947 to June 30, 1948 will be received until Feb. 28, 1947. Application blanks may be obtained by addressing the secretary, Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, Washington 25, D. C. In addition to a statement of the problems and research plan or program, the committee desires information regarding the proposed method of attack, the institutional support of the investigation and the uses to be made of the sum requested. No part of any grant may be used by the recipient institution for administrative expenses. The committee makes grants-in-aid of research in the general field of experimental and clinical endocrinology. However, applications for support of research in the problems of sex in the narrower sense cannot be given favorable consideration, and investigators seeking support in this field should direct their proposals to the committee for research in problems of sex of the National Research Council. The committee on research in endocrinology, however, will continue to give consideration to the support of studies of the effect of sex hormones on nonsexual functions, e. g., on general metabolism and on the metabolism of steroid hormones.

LATIN AMERICA

Congress of Pharmacology.—The third Pan American Congress of Ophthalmology will be held in Havana, Cuba, Feb. 23-28, 1948, under the presidency of Dr. Tomas R. Yanes (THE JOURNAL, October 5, p. 299).

New Medical Society.—The Sociedad Ycateca de Obstetricia y Ginecologia with headquarters at Calle 59, Numero 539, Merida, Yucatan, Mexico, was recently established with Drs. Eduardo Urzaiz Rodriguéz president, Fernando Narvaez Aguilar vice president and Manual Espinosa Sierra secretary.

New Journal.—The *Revista de Nutricion*, the organ of the Instituto Nacional de Nutricion of Lima, Peru, recently appeared. The headquarters of the *Revista* is at Ave. Salaverry, Lima, Peru. The first issue does not indicate how often it will be published.

First Inter-American Congress on Brucellosis.—Bi-yearly conferences on brucellosis have been in progress in Mexico since 1930. The fourth was held in Morelia, Mexico, July 1944. The fifth congress was held in Mexico City Oct. 28-Nov. 2, 1946 under the sponsorship of Dr. Jose Zozaya, chairman of the National Brucellosis Commission; the Mexican Society of Tropical Medicine, of which Dr. S. Gonzales Herrejon is chairman, and the Organization Committee of the Congress for the Study of Brucellosis, of which Dr. M. Ruiz Castañeda is chairman. This meeting became the first Inter-American Congress on Brucellosis and was attended by invited speakers from Argentina, Brazil, Cuba, El Salvador, Bolivia, Colombia and Puerto Rico. From the United States were Alice C. Evans, senior bacteriologist of the United States Public Health Service (retired); I. Forest Huddleson, research professor in bacteriology, Michigan Agricultural Experiment Station, Michigan State College; C. F. Jordan, epidemiologist, Iowa State Department of Health; V. T. Schuhardt, University of Texas, Galveston; Joseph D'Antoni, Tulane University, New Orleans; H. J. Schmidt, Mississippi (formerly Tulane University); James P. Campbell, Wheaton, Ill.; Mayor J. Moss, Muncie, Ind.; H. M. Powell, Indianapolis, and Harold J. Harris, New York. The opening address was given by Harris, who reviewed the milestones in the study of brucellosis from the time of Bruce and stressed the contributions made by researchers and clinicians in this hemisphere. Evans discussed public health aspects of brucellosis, Huddleson the unsatisfactory status of cattle vaccination and the possibilities of an improved method, Schmidt the changing virulence of Brucella abortus and its tendency to become a chronic infection, D'Antoni intestinal brucellosis, Schuhardt the chemotherapy of brucella infection in cattle, Campbell the possibility of human transmission, Harris technical factors, uses and limitations of the opsonocytophagic test, and Jordan the epidemiology of brucella infection. (The paper by Harris was prepared with the collaboration of Blanche L. Stevenson, R.N., and Jacoba V. Schochat, B.A.). Important papers from the Spanish speaking countries were presented by Emmanuel Dias, Brazil; Francisco De La Cruz, Cuba; M. Ruiz Castañeda, Mexico; Elidberto Fernandez Ithurrat, Buenos Aires; the late Salvador Mazza, Buenos Aires; Andres Soriano, Bogota, Colombia; Felix Veintemicla, La Paz, Bolivia; Petro Menendez and Roberto Vargas, El Salvador; Oulton Carlos, Cordoba, Argentina; A. Pomales-Lebron, San Juan, Puerto Rico; T. Villefana Lastra, Cordoba, Argentina; C. Carrillo Cardenas, Mexico; Sabino Di Rienzo, Cordoba, and E. Criscuolo, Cordoba, among others. Other papers covering virtually the entire field of brucellosis from the clinical and laboratory points of view were presented. The increasing recognition of the disease in various Central and South American countries became apparent from the data presented. The majority of infections were reported to be of the melitensis (goat) variety. Of interest was the fact that ingestion of cheese made from raw milk of goats and cows accounted for the largest percentage of cases in Mexico City, milk being boiled before used as such. Dr. Alice C. Evans was elected president. An inter-American Committee on Brucellosis was appointed consisting of Alice C. Evans of the United States, chairman; Dr. M. Ruiz Castañeda, Mexico; Dr. Salvador Mazza, Argentina, and Dr. I. F. Huddleson, East Lansing, Mich. This committee was empowered to bring to the attention of the proper division of the United Nations the importance of forming a world organization to deal with the problem of brucella infection in animals and man. The second Inter-American Congress on Brucellosis is to be held in Argentina in 1948, probably in April.

FOREIGN

Gift of Radium to Switzerland.—Belgium has offered 3 Gm. of radium to Switzerland in gratitude for "hospitality granted Belgian refugees during the war," the Swiss radio announced. In accepting the gift, the Swiss government said that it would be used in the fight against cancer.

Course of Urology.—A course of urologic instruction will be presented at St. Peter's and St. Paul's hospitals, London, beginning in January and continuing throughout April. A six months' course will begin on the conclusion of the postgraduate course. The fee for the three months' course is 15 guineas payable in advance. Applications should be made to the secretary, St. Peter's Hospital for Stone, Henrietta Street, London, W. C. 2, England.

Congress on School Hygiene.—The French Society for School Hygiene and the Society of Medical Inspectors of the Schools in the Seine district are sponsoring a Congress on School and University Hygiene in Paris, June 25 to 29, 1947 under the auspices of the ministers of education and public health. Physicians interested in school hygiene in various countries are invited to participate either as discussants or as reporters. Participation and registration are free. At that time the French Society for School Hygiene will propose the creation of a commission to be charged with the organization of periodic congresses concerning school hygiene.

Marriages

JAMES MARSHALL SKINNER JR., New Martinsville, W. Va., to Miss Mary Elizabeth Hurban of Powhatan Point, Ohio, June 6.

HAROLD HENSTORF, Farragut, Iowa, to Miss Marie D. Richter of St. Cloud, Minn., in Kansas City, Kan., August 8.

JOHN WILLIAM VANDERBILT, Plattsburgh, N. Y., to Miss Marguerite Jean Orr of Ormstown, Quebec, Canada, August 14.

JACK H. NEESE, Charlotte, N. C., to Miss Jacquelyn Reflogal of Clearwater, Fla., in Monroe, N. C., August 9.

HAROLD IRA HARVEY, New Britain, Conn., to Miss Ada Patricia Hawe of Binghamton, N. Y., June 20.

ALBERT HAROLD WILLIAMS, Revere, Mass., to Miss Loise Carol Schear of Evansville, Ind., September 8.

GABRIEL P. JOSEPH, Myrtle Beach, S. C., to Miss Mary Elizabeth McAlhany of Branchville, August 5.

LESLIE STAEBLER PIERCE to Miss Mary McNair Cadzow, both of Greensburg, Pa., September 14.

MORTON NATHANSON, New York, to Miss Peggy Lee Prag of Richmond, Va., September 1.

CHARLES F. SHERWIN, St. Louis, to Miss Myra Murrell of Lonedell, Mo., August 11.

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Deaths

Paul Pressly McCain ✠ Sanatorium, N. C.; born in Due West, S. C., June 26, 1884; University of Maryland School of Medicine, Baltimore, 1911; assistant professor of medicine at the Duke University School of Medicine in Durham; specialist certified by the American Board of Internal Medicine; awarded the Moore County Medical Society medal for his paper presented at the 1928 annual session of the Medical Society of the State of North Carolina, of which he had been president; past president of the Buncombe County Medical Society; served as president, vice president, member of the board of directors and executive committee of the National Tuberculosis Association; past president of the Southern Tuberculosis Conference; director and member of the executive committee of the North Carolina Tuberculosis Association; member of the American Trudeau Society, serving as a member of its council from 1939 to 1942, American Clinical and Climatological Association and the Southern Medical Association; member of the subcommittee on tuberculosis of the National Research Council; since 1924 superintendent, medical director and director of the extension department of the North Carolina Sanatorium for the Treatment of Tuberculosis, where he was chief of medical service and assistant superintendent from 1914 to 1923; served as superintendent of the Western North Carolina Sanatorium in Black Mountain and the Eastern North Carolina Sanatorium in Wilson; received an honorary LL.D. degree from the University of North Carolina in 1936; on the editorial board of the *North Carolina Medical Journal*; trustee of the Flora Macdonald College, Red Springs; killed instantly near Raleigh Nov. 25, 1946, aged 62, when his automobile collided with a bus while he was on his way to attend a medical meeting.

Eugene Anthony Stack, Chicago; born in Chicago, March 28, 1908; Loyola University School of Medicine, Chicago, 1935; interned at the Cook County Hospital and the Kankakee (Ill.) State Hospital; served a residency at the Municipal Contagious Disease Hospital, Presbyterian Hospital and the Children's Memorial Hospital; member of the American Medical Association; specialist certified by the American Board of Pediatrics; began active duty as a lieutenant in the medical corps of the U. S. Naval Reserve in March 1943 and released from active duty with the rank of lieutenant commander in February 1946; on the staffs of St. Anne's and Children's Memorial hospitals; died in the Belmont Hospital Dec. 1, 1946, aged 38, of a skull fracture received in an automobile accident.

Ira Clyde Miller ✠ Harrisburg, Pa.; born in Johnstown, Pa., March 22, 1895; University of Pittsburgh School of Medicine, 1928; special epidemiologist of the Pennsylvania Department of Health; also a graduate in pharmacy; interned at St. Francis Hospital in Pittsburgh; served in France during World War I; began active duty in the medical corps, Army of the United States, in June 1941; spent eighteen months as the commanding officer of the 12th Hospital Center in England; awards include the Bronze Star; service terminated in May 1946 with the rank of colonel; died Oct. 31, 1946, aged 51, of carcinoma of the parotid gland.

William Leland Holt, Amherst, Mass.; Harvard Medical School, Boston, 1905; member of the American Medical Association; formerly college physician at the Massachusetts State College; served as health officer of Hot Springs National Park, Ark., as professor of hygiene and university physician at the University of Tennessee at Knoxville and as director of the division of communicable diseases and social hygiene in the state department of health of Maine; died in the Cooley Dickinson Hospital, Northampton, Oct. 18, 1946, aged 67, of shock following a prostatectomy.

Julius Ord Arnson ✠ Bismarck, N. D.; Northwestern University Medical School, Chicago, 1911; specialist certified by the American Board of Internal Medicine; fellow and governor of the American College of Physicians; interned at St. Barnabas Hospital in Minneapolis; served in France during World War I; member of the board of editors of the *Journal-Lancet*; part owner of the Quain and Ramstad Clinic; on the staffs of St. Alexius Hospital and the Bismarck Evangelical Hospital, where he died Oct. 29, 1946, aged 58, of coronary thrombosis.

William Edward Patterson ✠ Minneapolis; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; served as assistant professor of ophthalmology at the University of Minnesota Medical School and the graduate school; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; formerly vice president of the Hennepin County Medical Society; on the staffs of Asbury and St. Barnabas hospitals; died Oct. 30, 1946, aged 71, of pulmonary embolism.

John Ashworth, Chicago; born in Chicago, Dec. 16, 1906; Northwestern University Medical School, Chicago, 1935; member of the American Medical Association; interned at the Cook County Hospital, where he engaged in research work; instructor in the department of medicine at his alma mater; began active duty as a major in the medical corps, Army of the United States, in July 1942; released from active duty June 25, 1946 with the rank of lieutenant colonel; died in the Belmont Hospital Dec. 2, 1946, aged 39, of injuries received in an automobile accident.

Frederick Beekel, East Cleveland; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1906; member of the Cleveland Academy of Medicine and the Cleveland Medical Library; for many years on the staff of the Cleveland City Hospital; died Nov. 3, 1946, aged 65, of coronary heart disease.

Harry Granville Bonnell, Tucson, Ariz.; Starling Medical College, Columbus, Ohio, 1900; member of the American Medical Association; died recently, aged 72.

Lynn Brownell Chase ✠ Morrisville, N. Y.; University of the City of New York Medical Department, New York, 1893; past president of the Madison County Medical Society; director and vice president of the First National Bank of Morrisville; first president of the board of education of the Morrisville Central School district; served as school physician, health officer of the town of Eaton and village of Morrisville; director of the Business Men's Association; died Nov. 3, 1946, aged 73, of heart disease.

John Summerfield Cherrington ✠ Logan, Ohio; Ohio Medical University, Columbus, 1897; for many years co-owner and chief of the surgical staff of the Cherrington Hospital; died in the Hocking Valley Hospital Oct. 22, 1946, aged 74, of cerebral embolism.

Mayer S. Coffler ✠ Chicago; University of Illinois College of Medicine, Chicago, 1913; served during World War I; died in the Mount Sinai Hospital Oct. 16, 1946, aged 59, of hypernephroma of the left kidney.

Percival F. Dalphin. ✠ Malone, N. Y.; Bellevue Hospital Medical College, New York, 1891; served during the Spanish-American War and World War I; formerly associated with the U. S. Public Health Service; on the staff of the Alice Hyde Memorial Hospital; died Sept. 24, 1946, aged 78, of chronic interstitial nephritis and hypertrophied prostate.

David A. Dickson, Grand Rapids, Mich.; Detroit College of Medicine, 1904; also a graduate in pharmacy; on the staff of the Butterworth Hospital, where he died Oct. 31, 1946, aged 75, of pulmonary tuberculosis.

Esgar Bowen Foltz ✠ Akron, Ohio; Medical College of Ohio, Cincinnati, 1899; trustee of the Akron Art Institute and the Summit County Historical Society; for many years jail physician; died in the People's Hospital Oct. 22, 1946, aged 73, of arteriosclerosis, asthma and anemia.

Grant W. Gregg, Ashland, Ore.; Medical College of Ohio, Cincinnati, 1890; on the staff of the Community Hospital; member of the school board and city councilman; died Oct. 9, 1946, aged 81, of coronary thrombosis.

Henry M. Haynes, Gatesville, Texas; Dallas Medical College, 1904; member of the American Medical Association; past president of the Coryell County Medical Society; for many years city health officer; died recently, aged 70, of coronary thrombosis.

William Brown Heagerty, Sierra Madre, Calif.; L.R.C.P., L.R.C.S., Edinburgh, and L.F.P.S., Glasgow, Scotland, 1900; formerly associated with the Indian Service; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; died recently, aged 70.

Ira Dorman Nelson, Albuquerque, N. M.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1904; for many years associated with the Indian Service, serving as superintendent of many of its hospitals; died Oct. 6, 1946, aged 68, of carcinoma.

William Oscar Pollard, Speers Ferry, Va.; Medical College of Virginia, Richmond, 1904; member of the American Medical Association; died Oct. 28, 1946, aged 68, of injuries received in an automobile accident.

R. Ford Ratliff, Lucedale, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1901; member of the American Medical Association; died Oct. 16, 1946, aged 68, of cardiorenal disease.

Claudius J. Riddick, Suffolk, Va.; Bellevue Hospital Medical College, New York, 1890; member of the American Medical Association; served as county physician; on the staff of the Virginia General Hospital; died Oct. 18, 1946, aged 87, of arteriosclerosis.

Frederick Arthur Rieckhoff, Ridgeville Corners, Ohio; Ohio State University College of Medicine, Columbus, 1917; member of the American Medical Association; died in Minneapolis Oct. 29, 1946, aged 55, of heart disease while en route from Chicago to Minneapolis on a plane.

Harry Rubinstein ✠ Pittston, Pa.; Medico-Chirurgical College of Philadelphia, 1910; served during World War I; connected with Pittston Hospital; died Oct. 13, 1946, aged 65, of acute cardiac dilatation.

John Joseph Sheehey ✠ Graymoor, N. Y.; University of Wooster Medical Department, Cleveland, 1891; Affiliate Fellow of the American Medical Association; served on the staffs of the Coney Island, Samaritan, Harbor and Caledonia hospitals in Brooklyn; retired to the Franciscan Monastery to serve as physician for the Friars; died in St. Clare's Hospital in New York Oct. 2, 1946, aged 79, of myocardial failure.

Oscar Henry Shepard, O'Donnell, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1905; died in a hospital at Lubbock recently, aged 75, of coronary thrombosis.

David Herman Smith, Millbrook, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1894; served on the staffs of Mercer (Pa.) Cottage and Grove City (Pa.) hospitals; died Oct. 21, 1946, aged 78, of arteriosclerosis.

William S. Stanley, Milwaukee; Milwaukee Medical College, 1900; member of the American Medical Association; died Oct. 27, 1946, aged 69, of hypertensive heart disease.

Edward Clayton Stroud, Marietta, S. C.; University of the South Medical Department, Sewanee, Tenn., 1899; honorary member of the South Carolina Medical Association and the Greenville County Medical Society; died Oct. 2, 1946, aged 71.

Mathias Sundt ✠ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; on the staff of the Fairview Hospital, where he died Oct. 21, 1946, aged 63, of carcinoma of the colon.

LIEUT. FELIX B. LONG JR. (MC), U. S. Navy, 1915-1942

LIEUT. LOUIS W. STREUTER (MC), U.S.N.R., 1914-1945

Robert Edward Timberlake ✠ Richmond, Va.; Medical College of Virginia, Richmond, 1914; for many years physician for the city health department; died in the Stuart Circle Hospital Oct. 27, 1946, aged 56, of a ruptured diverticulum.

Edward Patrick Troy, Chicago; Northwestern University Medical School, Chicago, 1914; member of the American Medical Association; interned at Cook County Hospital in 1916, when he joined the City of Chicago Municipal Tuberculosis Sanitarium, where he was superintendent of dispensary service for many years; at one time physician in charge of the Robey Street Dispensary; served during World War I; died Dec. 11, 1946, aged 59, of cerebral hemorrhage.

James Frederic Wagner, Bristol, Pa.; Jefferson Medical College of Philadelphia, 1904; member of the American Medical Association; served as a member and president of the Bristol borough council and board of health; past president of the Bucks County Medical Society; fellow of the American College of Surgeons; died in Southington, Conn., Oct. 7, 1946, aged 67, of cerebral thrombosis.

Otto Wagner ✠ Elizabeth, N. J.; Cornell University Medical College, New York, 1903; member of the Board of Fire Commissioners and director of Elizabeth Trust Company; formerly city physician and member of the city council; consulting physician at Alexian Brothers Hospital, St. Elizabeth Hospital and Elizabeth General Hospital, where he died Oct. 22, 1946, aged 74, of carcinoma of the rectum.

Wilber Lloyd Warren ✠ Gilman City, Mo.; John A. Creighton Medical College, Omaha, 1916; served as a member of the Selective Service Board; on the staff of the Wright Memorial Hospital in Trenton; died Oct. 29, 1946, aged 57, of cardiac decompensation.

Louis Weber, West Baden, Ind.; University of Louisville Medical Department, 1898; for many years assistant medical director for the Commonwealth Life Insurance Company in Louisville; died in St. Joseph Infirmary, Louisville, Oct. 25, 1946, aged 71, of cerebral hemorrhage.

Jabez William West, Idaho Falls, Idaho; Western Reserve University School of Medicine, Cleveland, 1918; member of the American Medical Association; died suddenly Oct. 11, 1946, aged 61, of coronary thrombosis.

George David Wilde ✠ Fort Edward, N. Y.; Albany Medical College, 1904; in 1922 became associated with the medical department of Endicott-Johnston Corporation; died recently, aged 66, of hypertensive heart disease and coronary thrombosis.

KILLED IN ACTION

Felix Benjamin Long Jr., Assistant Surgeon, Lieutenant, U. S. Navy, Starkville, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1940; interned at the Southern Baptist Hospital in New Orleans; entered the medical corps of the U. S. Naval Reserve as a lieutenant (jg) on July 23, 1941; began active duty in the same rank on Sept. 10, 1941; commissioned a lieutenant (jg) in the medical corps of the U. S. Navy on Jan. 5, 1942; promoted to lieutenant on June 15, 1942; took his training at Corpus Christi, Texas, and flight training at Washington, D. C., and Pensacola, Fla.; served overseas at New Caledonia and Guadalcanal, attached to the 13th Marine Division as flight surgeon; awarded the Purple Heart; killed in action in the Pacific area Nov. 14, 1942, aged 27.

Louis Warren Streuter, Hamilton, Ohio; St. Louis University School of Medicine, 1940; interned at St. Louis City Hospital, where he served a residency; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on March 15, 1943; promoted to lieutenant; killed in action in the Philippines; aged 31; presumptive date of death Oct. 26, 1945, according to the U. S. Navy.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 7, 1946.

The Nostrum Evil

At the Hunterian Society an interesting debate took place on the nostrum evil. The motion was: "That the uncontrolled advertising of patent medicines is a menace to the public." The debate was led on the positive side by Mr. H. Linstead, secretary of the Pharmaceutical Society, and on the negative by a layman, Mr. Mortimer, director of a company which produces a well known proprietary medicine. In the course of the debate varying estimates were made of the amount spent annually on proprietary medicines. One physician said that as much as $36,000,000 a year was spent in advertising them, but Mr. Mortimer declared that the figure was much lower. The last published figure for the prewar year 1938 was $19,300,000 for all these preparations, including tonic wines, veterinary medicines and rupture appliances. The advertising space occupied no more than 8 per cent of the total advertising space in newspapers. But he admitted that his figures related only to advertising in the newspapers and took no account of advertising by posters on railways and other places or advertising by correspondence.

In the debate a curious sidelight was thrown on the working of national health insurance. It was seriously argued that physicians ought to be thankful to the manufacturers of proprietary medicines, for if they had to deal with all the persons who go to the pharmacist for something to relieve an ache or pain their surgeries would be choked with patients. They would have to see again all those whom they hoped they had seen for the last time. The advent of national health insurance apparently caused no falling off in the demand for proprietary medicines. One speaker, a physician, prophesied that under the proposed National Health Service, which covers all persons, the sales of proprietary medicines will be doubled or trebled. For this he gave the psychologic reason of the ineradicable conviction of most persons that what is not directly paid for is of no value. Thus he made apparent the great drawback of any "free to all" scheme. But one might go farther than this revelation of the debate. In spite of whatever relief the harassed panel physician gets from the sale of proprietary medicines, much of his time is taken up by hypochondriacs and others with nothing the matter. In periods of stress they take up so much time that they limit his attention to cases of serious illness. Thus there are two opposite effects of the "free to all," but both can be traced to the craving for bottles of medicine, which an eminent surgeon of a former generation, Sir Frederick Treves, said was in this country "second only to the craving for strong drink."

Overseas Examinations by the Royal College of Surgeons

The Fellowship of the Royal College of Surgeons is the highest surgical qualification in the British empire and, though sought from all over the world, the examinations have always had to be taken in London. But the College has made a new departure. In response to requests from the Royal Australian College of Surgeons, the medical faculty of the Egyptian University, Cairo, and the Director General of Medical Services in India, the College will conduct the Primary Fellowship examination overseas. The following examiners have been appointed for the purpose: Sir Heneage Ogilvie, Prof. B. A. McSwiney, F.R.S., and Prof. G. Hadfield. They will conduct the examination in Cairo on December 12 and in Madras on December 23 and will begin in Australasia on January 6. The Australasian examinations will take place at Melbourne, Sydney and Dunedin. The examiners are expected to arrive back in this country about the end of January. The following associate examiners have been appointed to assist them: In Cairo, Prof. D. E. Derry and Prof. G. V. Anrep, F.R.S.; in India, Prof. A. A. Iyer; in Melbourne, Australia, Prof. S. Sunderland; in Sydney, Douglas Miller, and in Dunedin, John Carney.

The extent to which the new facilities offered to medical graduates of recognized universities overseas have been availed of can be judged by the numbers of candidates at the various centers: Cairo, 32; Madras, 65; Melbourne, 63; Sydney, 29, and Dunedin, 35. Those who satisfy the examiners will be eligible for the final Fellowship examination in this country and will have the opportunity to study surgical practice in England.

The Fatal Plastic Bib

A new danger to infant life, the result of technical progress which has given us plastics, is revealed by an inquest on a baby boy aged 3 months. An authentic account of the tragedy has been given in a letter to the *British Medical Journal* (November 23, page 804) by Dr. J. H. Fodden, pathologist to the Royal Salop Infirmary. The child was placed in his cot for sleep with a clean plastic bib tied loosely around his neck. The bib was small and was designed to fasten only around the neck with two pieces of tape. It was almost as thin as tissue paper and just as transparent. When the child was next seen he had been dead some hours. The thin plastic membrane covered his face almost as completely as did his skin. It took up every corner of his nose and mouth. The necropsy, which Dr. Fodden made, showed that the child had been asphyxiated. After he had warmed the bib in his hand for some time it seemed to become slightly "tacky." Then when placed over the child's face it spread quickly into the position of a close fitting mask. It is desirable that the warning of this tragedy should be widely circulated, as there may be millions of such bibs in use and on the market.

Labor Attempts to Coerce Nurses and Physicians to Join a Union

Since the return of the labor government the trade unions have become more aggressive. The latest manifestation of this is what is called "the closed shop" refusing, under the threat of a strike, to allow to work persons who are not members of a trade union. With the capture of many municipal bodies by labor, the way was opened for the rule that all the employees must be members of trade unions. The climax was reached when the matron, deputy matron, thirty-six nurses and one physician of the Willesden Municipal Hospital received notice of dismissal "in view of the fact that you have not complied with the council's resolution regarding membership of a trade union." Seventy nurses of Walthamstow received a similar notice that they must join a recognized trade union, and the same attempt at coercion has been made in other municipal hospitals. At Willesden the sister tutor and deputy matron had been serving the hospital for twenty-four years. Yet they were given a month's notice for a reason that had no relation to their capacity for their professional work. The answer of the nurses was an indignant refusal to comply with the order, and the council has begun to climb down. Unfortunately for them, there is a great shortage of nurses just now and if the nurses are dismissed probably none can be found to take their place. It is said that the council will recognize the Royal College of Nurses, to which most of the nurses belong, though this professional organization is not a trade union. Not only the press but the more wary tacticians who form the Labor Government have

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condemned the council for trying to coerce the nurses and not recognizing that the nursing of the sick is a primary matter which should come before politics. The British Medical Association is about to take action in the matter. The Secretary has declared that in the view of the British Medical Association no physician should be required to join any body, the British Medical Association or other.

MOSCOW

(From Our Regular Correspondent)

Oct. 12, 1946.

A New Method of Accelerating Labor

In 1945 Prof. R. Schub in the Central Institute of Gynecology and Obstetrics at Leningrad used thiamine hydrochloride for the first time as an anesthetic during labor. His method was tried in 900 cases; 250 pregnant women received vitamin B_1 as an anesthetic, and a control group of 200 pregnant women were anesthetized by other methods. All were completely examined, including multiple laboratory tests. Such detailed observations were not made on the remaining 450. The vitamin B_1 balance was studied during labor, post partum and in the puerperium, and the effects obtained were evaluated by special apparatus.

Anesthesia was begun simultaneously with active labor by intravenous, intramuscular and oral administration of 40 to 150 mg. of concentrated vitamin solution, each ampule containing 20 mg. of thiamine hydrochloride specially prepared by the All-Union Scientific Vitamin Institute. For oral use crystalline vitamin B_1 was taken.

The effect of intravenous administration was rapid but very short, and for this reason it was discontinued. Most active was the intramuscular administration of 60 mg. of thiamine hydrochloride. If pain appeared during parturition, a supplementary dose of 60 mg. of the drug was introduced. Anesthesia was observed in ten to fifteen minutes, and in 40 per cent of the women its effect was present till the end of labor. In 51.2 per cent the anesthetic effect was short, and in 5.6 per cent the administration of vitamin B_1 was ineffective.

This method is not dangerous for mother or child. In a few cases, an evanescent hyperemia was observed. Previous observations indicated that B-hypervitaminosis was seen only when doses much larger than those of Professor Schub are used.

The administration of vitamin B_1 considerably accelerated labor. Its duration was half as long as usual. A physiologic explanation is as follows: Vitamin B_1 deficiency inhibits phosphorus metabolism closely connected with the synthesis of carbohydrates which diminishes the energy reserves of muscular tissue. The introduction of thiamine delays muscular fatigue, helps to store glycogen and thus forms an energy reserve. It accelerates contractions of the involuntary muscles having a direct peripheral effect as well as acting on the centers, as was demonstrated by Chochard.

This complex work of studying the action of vitamin B_1 during labor has only begun. It is headed by Prof. R. L. Lourje and P. L. Beloschaska in consultation with Prof. A. E. Mandelstamm, S. A. Jagunov and others. The scientific Medical Council of the All-Union Ministry of Health has proposed that the Leningrad, Moscow, Kiev, Voronesz and Sverdlovsk gynecologic and obstetric clinics study Schub's method, which opens new ways in the management of labor.

The Cancerolytic Substance of Trypanosoma Crusi

Recently Prof. Nina G. Klujeva, corresponding member of the Academy of Medical Science of the Union of Soviet Socialist Republics, and her husband, Prof. Gregory J. Roskin, presented at the meeting of the academy a report of their investigations begun in 1929 in which they had nearly 70 per cent of cures in adenocarcinomatous mice. After inoculation the mice were infected with South American Trypanosoma crusi, causative agent of Chagas' disease. In the remaining 30 per cent the development of tumor was delayed. These results were published in the Soviet Medical Press. Klujeva and Roskin continued their experiments (stopped during the war and taken up again in 1943) on other types of malignant tumors.

Experiments on more than 13,000 laboratory animals demonstrated the existence of a specific tumor trophism. In the control animals which have not been inoculated with the tumor, trypanosoma may be seen in the internal organs, while in cancerous animals they are found principally in the tumor tissue. Trypanosoma penetrate into malignant cells in which the process of destruction beginning in the nucleus is observed. As a result areas of destroyed malignant tissue increase, gradually surrounding all the neoplasm, and in their place new connective tissue forms.

The endotoxin of the trypanosoma has a great cancerolytic effect in different inoculated forms of experimental cancer. The cancerolytic substance present in the trypanosoma body is water soluble, stabile to acids and alcohol and may be filtered through Berkefeld L-3. It was demonstrated that this substance has a cancerolytic effect on human malignant neoplasms and is innocuous even with prolonged subcutaneous or intramuscular administration. Sometimes a slight temperature reaction was observed, but it disappeared after the injections were finished.

This cancerolytic substance, named KR after the first letters of the investigators' names, was administered to 18 patients in the fourth stage of cancerous disease of the lips, larynx, breast and uterus. Such cases were selected because they permitted continuous observation of the action of KR. Destruction of the tumor was observed in 11 patients; 1 was made curable, and, following treatment with x-ray, the laryngeal tumor completely disappeared. In another case where the diagnosis was histologically confirmed, subcutaneous administration of KR caused the tumor to completely disappear. The patient has been under observation more than half a year and pathologic changes are absent.

The data demonstrate that the anticancerous substance of T. crusi has an elective cancerolytic action and simultaneously is innocuous to healthy tissues. Such eminent Soviet scientists as Petrov, Bogomolets and others appraise this work highly. At present Klujeva and Roskin are studying the disintegration of tumor cells, methods of obtaining a chemically pure preparation of KR, various forms of the cancerolytic substance and its use in different stages of cancer.

Medical Societies in the Soviet Union

The All-Union Minister of Health has approved a new structure of scientific medical societies in this country. All-Union special societies will be organized. Medical societies of republics, regions and cities will be included, as well as existing All-Russian societies and associations.

A registration of all former and present members of scientific medical societies is being made. Scientific workers with a candidate's or doctor's degree who have been recommended by two society members may be elected. Physicians who have been practicing not less than two years and who have published contributions also may be elected members after recommendation by three members of the society. Physicians who are famous because of their scientific contributions or activity in health organizations may be elected honorary members.

The Soviet Union Scientific Medical Council of the Ministry of Health must work out in collaboration with All-Union Medical Societies the plan of their meetings and programs for 1947-1948 before Dec. 1, 1946. A committee for the guidance of medical scientific societies has been organized under the presidency of Prof. V. S. Preobrajensky, honorary worker of science.

Death of Alexander Bogomolets

The eminent Soviet pathologist Alexander A. Bogomolets died, July 19, 1946 at the age of 65. He was president of the Ukrainian Academy of Sciences, a member of the Presidium of the Soviet Union Academy of Sciences, a Stalin Prize winner and deputy of both Supreme Councils.

He graduated from the medical faculty in 1906, receiving his M.D. degree in three years. After studying physiology in Paris, he was elected, in 1912, professor of general pathology and bacteriology in the Saratov University. In 1928 he was appointed to the Chair of Pathology in the Second Moscow Medical Institute, and two years later he was elected president of the Ukrainian Academy of Sciences at Kiev. There he organized the Institute of Experimental Biology and Pathology, of which he was director until his death.

Bogomolets wrote many scientific works and many were published by his famous school of pathophysiologists on such subjects as metabolism, allergy, nervous regulation of the vegetative functions, pathophysiology of hypertension and premature senility. The chief studies of Bogomolets and his collaborators concerned connective tissue, and they resulted in a method for treatment of various conditions by means of antireticular cytotoxic serum (ACS). This serum is made from the blood of horses which previously had received a spleen preparation that stimulates the activity of connective tissue. ACS helps in the healing of fractures, wounds and ulcers by improving the nourishment of cells.

The manual on pathophysiology written by Bogomolets is widely used by Soviet physicians and medical students. In a special decision, the Council of Ministers of the Soviet Union resolved that Bogomolets's name be honored at the Kiev Medical Institute and the Institute of Experimental Biology and Pathology. To perpetuate his memory an annual prize of 25,000 rubles ($5,000) is to be awarded by the Ukrainian Academy of Science. Thirty scholarships in his name are to be instituted for postgraduates, and his scientific work will be published by the Ukrainian Academy of Sciences during the years 1946 to 1948.

DENMARK

(From Our Regular Correspondent)

COPENHAGEN, Dec. 9, 1946.

The Danish Medical Association

A recent report on the activities of the Danish Medical Association, with a membership of 4,239, reveals a varied spectrum with helpfully disinterested advice at one end, gently chiding admonitions in the middle and stern disciplinary measures at the more somber end. Somewhere in the middle of this spectrum is the problem raised by a local branch of the association anxious to obtain from its central council a ruling on what part, if any, is to be played by the medical profession in beauty culture. It was asked, can a doctor act as judge at an examination conducted at an institute for beauty culture? The answer pointed out that though participation by the medical profession in the beautification of the nation is not directly prohibited by the rules of the association, such participation should be frowned at rather than smiled on, since some beauty experts have been tempted to puff themselves as having been "medically approved" in the sense that they have passed a medical examination on beauty culture. Among the instances requiring sterner measures is that of a physician who, during the occupation of Denmark by the Germans, acted as a locum tenens for a colleague in hiding from them. A rebuke was administered to the locum tenens for having exploited his colleague's embarrassment by exorbitant charges.

Supervision of Medical Notes in the Lay Press

During a general debate at a recent meeting of the Danish Medical Association, the suggestion was made that this body should appoint a press secretary to act as a watchdog on incorrect and misleading medical news in the lay press. The Danish Medical Association has for many years collected press cuttings, and the above suggestion aimed merely at extending this activity. The lack of enthusiasm for this suggestion was most effectively voiced by one speaker who said that a medical press secretary who attacked every little mistake in regard to medical matters in the lay press would succeed in making himself a nuisance without really helping to educate the public. An official denial appearing in the lay press would, as a rule, just draw attention to some trifle which the public had already forgotten. One the other hand, the editor of the journal of the Danish Medical Association (*Ugeskrift for læger*) Dr. Mogens Fog said he would like the lay press to be free to cull medical news from the medical press.

Fees for Locum Tenens

In 1939 a scale of charges for a locum tenens was drawn up by the Danish Medical Association with the intention of preventing abuses at either end of the scale. But since then terms have so often been agreed on between the interested parties without reference to the official scale that its further maintenance has seemed questionable. Not only has the Danish Medical Association often been left out of the picture altogether in negotiations between the contracting parties, but the journal of the Danish Medical Association has actually been employed as a medium for advertising locum tenens terms incompatible with the association's rules. To put an end to this unconstitutional state of affairs, the association has recently discussed two possibilities. The first and least attractive is to let the laws of supply and demand dictate terms. If this is done a locum tenens can force prices up when physicians are few and the other side can force prices down when physicians are many. The outcome of such a state of affairs would, in the opinion of the association, be so unsatisfactory that it would be wiser to adopt the second alternative and definitely to brand as unethical those agreements which fail to comply with the rules laid down by the association. However, it is pointed out that such rules should not apply to hospital appointments or to a specialist employing a locum tenens.

Responsibility for Appendicitis Mortality

Though Denmark has a population of only 3.9 millions, there were as many as 283 deaths from appendicitis in 1944. In the same year there were some 2,100 patients treated for appendicitis in the hospitals of greater Copenhagen. Among these patients there were 48 deaths, 28 due to peritonitis. Dr. Mogens Ingerslev of Surgical Department A at the Bispebjerg Hospital has recently undertaken an investigation of what befell the 221 patients with appendicitis treated in his hospital before Feb. 1, 1946. The title of his study, Responsibility for the Mortality of Acute Appendicitis, gives an accusatory tone to his study. He classifies his 221 patients according to the interval between the onset of pain and the request for medical aid. In 50 cases the correct diagnosis was not made at a physician's first visit, and these cases are classified according to the interval between the first and second visit of the physician. The 221 cases are also classified according to the general condition of the patient on admission to the hospital and the degree and localization of the pain. It was noteworthy that in as many as 71 cases there was a history of one or more previous attacks. The final conclusion to which Dr. Ingerslev comes is that appendicitis mortality is not going to be greatly reduced by sulfonamide preparations, penicillin and the like but by application of the three golden rules: early diagnosis, early admission to a hospital and early surgical intervention.

Correspondence

POSITIONS IN PUBLIC HEALTH

To the Editor:—The practice of public health is becoming recognized as a specialty of medicine by both the profession and the public. The medical profession is taking the leadership in the promotion of adequate health departments staffed by well qualified, well trained people and is insisting that there be medical direction of these health departments. Government is recognizing the soundness of this principle and many recent appointments are evidence that government wishes to entrust the responsibilities for its public health only to physicians who are qualified by training and experience to assume the administrative position of health officer.

In THE JOURNAL, Dec. 22, 1945, page 1161, Dr. Thomas Parran, Surgeon General of the United States Public Health Service, pointed out the lack of qualified physicians in this specialty and emphasized the career opportunities available to young physicians who wish to practice this type of medicine. The New York State fellowship program is the result of recognition of the need for adequately qualified public health physicians to carry out the duties of full time health officers.

This training program consists of six or more months' field experience under the direct supervision of a medical health officer of the state department of health followed by an academic year at one of the postgraduate schools of public health. During the field training the physician on fellowship is afforded the opportunity to conduct epidemiologic investigations of outbreaks of communicable disease and to assist in the application of control measures. He observes and participates in community control measures, such as mass immunization or mass tuberculosis case finding. He ascertains the value of statistics in measuring the health of the community and the effectiveness of his work. He participates in the educational methods which are practiced to make the scientific aspects of preventive medicine applicable to every day community improvement of health. He is instructed in business and administrative principles and procedures necessary to carry on the functions of a well organized health department. Recognition is given to the need for correlation of the community practice of medicine by the health officer, with the clinical practice of medicine by the private practitioner. This period of field training is in effect a "residency in public health." After successfully completing this residency, he is enrolled in one of the schools of public health for one academic year, at the end of which he is eligible for the degree of Master of Public Health.

A careful selection of the applicants is made. The applicant for the fellowship must be a graduate of a school of medicine approved by the American Medical Association, must have served an internship of at least one year's duration in a hospital approved for such internship by the American Medical Association and must be licensed or eligible to take the examination for license to practice medicine in New York State. Some experience in the clinical practice of medicine is desirable but not required. He must be a citizen of the United States and should be not more than 35 years of age.

The fellowship is $295 per month for the field training period and either $200 or $300 per month during the academic training. The amount varies with whether or not the Fellow has dependents. Necessary travel and other expenses are paid by the department, and tuition at the school of public health is granted in addition to the stipend allowance.

Opportunities in the field of public health are greater than ever before. There are currently thirty-seven vacancies in state and local full time health officer positions in New York State, exclusive of New York City. Entrance positions in the New York State Department of Health carry a salary of $4,560 per year. Advancement within the department is usually rapid, and highly desirable positions in local health departments are usually filled from the staff of the state department of health. Full time local health officer positions in New York State pay an annual salary of $6,000 to $10,000. All appointments carry the benefits of civil service, including liberal vacation and sick leave and retirement income after the age of 60. Independent research in public health problems is an integral part of the activities of the department of health.

Thus an opportunity is offered to young physicians to enter public health as a career in New York State. Fellowships are still available and applications are invited. Now that physicians are returning from the armed forces and all new graduates of medical schools are no longer being taken into the Army and Navy, this unusual opportunity may not continue much longer. Further information can be obtained on application.

FRANKLYN B. AMOS, M.D., Albany, N. Y.
Secretary, Executive Committee on Recruitment and Training of Medical Personnel, Department of Health, State Office Building.

THE PHYSICIANS' DESK REFERENCE OF MEDICAL ECONOMICS

To the Editor:—You probably have received a copy of the Physicians' Desk Reference Book to Pharmaceutical Specialties and Biologicals for 1947, published by Medical Economics, Inc., Rutherford, N. J.

You will certainly be interested in reading the letter which I have written to the editor and of which I am enclosing a copy.

Being a neurologist, I just happened to mention two conditions which affect my own field of work. But I feel sure that the observation could be duplicated many times.

KARL ROTHSCHILD, M.D., New Brunswick, N. J.

The letter follows:

I have received your Physicians' Desk Reference Book and I want to compliment you on the general excellence of the presentation of material.

Permit me, however, to make a few remarks which I think are of importance:

I had the opportunity to look into the blue section under the heading of Myasthenia Gravis. If the index is worth anything, it should certainly mention Prostigmine as the primary and, as I believe, the only remedy for this disease, the other mentioned therapeutic measures being at best only adjuvants. In fact the Intocostrin (Squibb) is definitely contraindicated and if you will look up the white section of the book you will find that it is recommended as a test in judicious hands only. An inexperienced reader might certainly be very much misled. I feel that the words "for testing" should be added to the listing on page 201.

In the same way, under Narcolepsy I miss any mention of Benzedrine, which certainly is known as the primary therapeutic agent for this disease.

The fact that the firms of Hoffmann-La Loache and Smith, Kline and French have not contributed to the white section should, in my opinion, not prevent you from being fair and giving the doctors a true picture of the pharmaceutical specialties in the proper indications.

A thorough revision of the P. D. R. in this respect will be absolutely necessary if the index shall serve the purpose to which you lay claim.

KARL ROTHSCHILD, M.D.

DENTAL BENEFITS UNDER COMPULSORY INSURANCE

To the Editor:—In the British *Dental Magazine and Oral Topics* (**63**:206 [Oct.] 1946) the following interesting item occurs:

In Great Britain a committee had gone into the question of dental benefit under the British National Health Insurance Act, and the following was a quotation from their report:

"Roughly two thirds of the insured population, that is, between thirteen and fourteen million people, are entitled to dental benefit, but only 800,000 (less than 7 per cent) of these claim it on an average each year."

It has always been my contention that making health services available and "free" is not enough. In our small health department clinics here in Birmingham we have to police some 10,000 syphilitic patients every year to make them return to the clinics and take at least the minimum required treatments. Our first

duty seems to be to teach the public the value of health. Were it deemed as valuable as liquor, tobacco, cosmetics or stainless steel jewelry, its availability would be certified. What socialized medicine wouldn't do for people, and what it would do to them still has not been made plain to the public at large.

The magazine also contains (p. 176) a most amusing forecast of British dentistry in the form of pages from a dentist's diary in 1961, strangled in red tape regulations.

DANIEL W. JOSSELYN,
408 Broadway, Edgewood,
Birmingham 9, Ala.

INTRAUTERINE RESPIRATION OF THE FETUS

To the Editor:—We are interested in the paper of Davis and Potter on "Intrauterine Respiration of the Human Fetus" which appeared in THE JOURNAL August 10. On the basis of our own experiments of this nature we feel that the evidence which they present fails to be convincing on at least three counts:

First, the proponents of the thesis that the fetus normally aspirates amniotic fluid in utero cite Ahlfeld's early paper on the observability of fetal respiratory movements through the intact maternal abdomen during the later stages of pregnancy. Yet rarely does an obstetrician encounter this phenomenon. If the authors themselves observed such movements in their own series, they fail to report them. It is our belief that if and when movements are observable the fetus may be in a state of mild anoxic distress. May it be that their late fetuses did not execute respiratory movements until the time of operation?

Secondly, the experiments lack sufficient controls. In 3 of the 4 control fetuses the authors failed to observe the presence of thorotrast in the respiratory tract; however, it is interesting that these controls were as small as or smaller (7.5 to 12 cm. in length) than the youngest fetus in which thorotrast was found in the lungs. The authors indicated the necessity for adequate concentration of thorotrast in the amniotic fluid in order to produce a visible lung shadow, yet in this control series the dilution was at its lowest level (12 cc.). In the youngest fetus showing good shadows, 35 cc. was used. They are not justified in concluding that the presence of thorotrast in the lungs is unrelated to the experimental or operative procedures.

In the third place, they failed to do the one thing which would have provided the best answer to their question and would have made their case more convincing had they then observed thorotrast in the fetal lung. They did not take roentgenograms of the fetus at regular intervals through the intact maternal abdomen. Knowing that it takes very little operative handling to disturb blood-gas relationships in animal fetuses in utero, we are inclined to believe that the aspiration observed by the authors occurred only during operation or delivery at cesarean section.

Our own experiments indicate that, when one clamps the trachea of an animal fetus immediately on incising the uterus, the histologic picture of the lungs of such fetuses is entirely different from any of the histologic pictures presented in this article (see paper by Whitehead, Windle and Becker, *Anat. Rec.* **83**:255 [June 25] 1942). The lung of the normal apneic fetus is apparently in complete atelectasis with unexpanded respiratory bronchioles, alveolar ducts and alveolar sacs. On the other hand, we do find amniotic contents aspirated and the respiratory passage dilated whenever any factor, even very slightly, intervenes at operation to alter the blood-gas relationships sufficiently to stimulate the respiratory center and initiate respiratory movements in amnio.

WILLIAM F. WINDLE, PH.D.
R. FREDERICK BECKER, PH.D.
Department of Anatomy,
University of Washington School of Medicine,
Seattle.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, Jan. 4, page 59.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, Jan. 21-23. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ARKANSAS: * *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Examination.* Los Angeles, March 10-13. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

CONNECTICUT: * *Medical. Examination.* Hartford, March 11-12. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 11. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

GEORGIA: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: Honolulu, Jan. 13-16. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, Jan. 14. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Jan. 28-30. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

MAINE: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, March 11-14. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MINNESOTA: * Minneapolis, Jan. 21-23. Sec., Dr. J. F. Du Bois, 230 Lowery Medical Arts Bldg., St. Paul 2.

MISSOURI: *Examination:* Kansas City, Jan. 27-29. Exec. Sec., Department of Education, Mr. John A. Hailey, State Capitol Bldg., Jefferson City.

MONTANA: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA: * *Examination.* Omaha, June 1947. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

NEVADA: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, Jan. 27-30. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

OKLAHOMA: * *Reciprocity.* Oklahoma City, Dec. 29-30. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: * Portland, Jan. 22-25. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, Jan. 2-3. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: * Pierre, Jan. 21-22. Sec., Dr. Gilbert Cottam, State Capitol Bldg., Pierre.

TEXAS: *Examination.* Galveston, Feb. 20-22. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: *Examination.* Burlington, Jan. 31-Feb. 1. Sec., Board of Medical Registration, Dr. F. J. Lawliss, Richford.

WASHINGTON: *Examination.* Seattle, January 1947. Sec., Mr. Nelson Vaughn, Olympia.

WYOMING: Cheyenne, Feb. 3. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: Feb. 8. Address State Board of Healing Arts, 250 Church St., New Haven.

DISTRICT OF COLUMBIA: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Rubland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: May 31. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, Jan. 14. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

NEBRASKA: Omaha, Jan. 14-15. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEW MEXICO: Santa Fe, Feb. 2. Secretary, State Capitol, Santa Fe.

OREGON: Portland, March 1. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Feb. 12. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dental Practice Acts: Revocation of License After Conviction for Rape.—The South Carolina State Board of Dental Examiners alleged that the defendant had been guilty of immoral or dishonorable conduct and asked that his license to practice dentistry be revoked. From a judgment in the trial court in favor of the defendant, the State Board of Dental Examiners appealed to the Supreme Court of South Carolina.

The defendant was licensed to practice dentistry in 1937, and he practiced his profession in South Carolina until September 1943, when he was convicted of rape, sentenced and later pardoned. The defendant admitted that he had been convicted of rape but denied that he was guilty. At the trial the Board offered in evidence the indictment, the verdict of guilty endorsed thereon and the sentence imposed by the court. A resolution of the Dental Board stating that on the record of the conviction the Dental Board believed that the defendant "has been guilty of immoral and dishonorable conduct which would prevent it from issuing to him a certificate to practice" was also offered in evidence. Oral evidence was introduced from various officers of the Dental Board to the effect that a license to practice dentistry would not have been issued to the defendant in the first instance had he been previously convicted of rape as shown by the court record.

The defendant first argued that a judgment in a criminal prosecution cannot be received in a subsequent civil action to establish the truth of the facts on which it was based and contended, therefore, that he was entitled to a trial *de novo*. While some courts have rigidly adhered to such general rule, said the Supreme Court, many others have relaxed or modified the rule in certain cases to the extent of permitting the introduction of the criminal conviction as prima facie evidence of the facts involved, and in at least one jurisdiction the judgment of conviction has been held to be conclusive. Continuing, the Court said that the state has a right under its police power to define the qualifications one shall possess in order to engage in the practice of dentistry and, in doing so, may properly require that such a person not only possess the necessary technical skill but also the qualifications of honor and good moral character. Proceedings to revoke a professional license are not an effort to further punish for the same offense one who may already have been punished but are a rightful exercise of the power of the state to protect its citizens from practitioners who do not possess the necessary qualifications. For all practical purposes, said the Supreme Court, the parties in the present proceeding are the same as those in the criminal proceeding. The defendant has had his day in court and has been convicted with all the safeguards thrown around a person accused of crime. The question of his guilt here is precisely the same as it was when determined adversely to him under circumstances most favorable to himself—that is, in a prosecution in which he could not have been convicted unless his guilt had been shown beyond a reasonable doubt. The reasons generally assigned for not giving a judgment of conviction conclusive effect have no application to the instant case, and no good reason appears why defendant should not now be permitted to collaterally attack the judgment of conviction.

The defendant next argued that the Dental Board possesses no inherent power to revoke the license of a dentist. The Dental Practice Act empowers the circuit judge to revoke or suspend the license of a dentist who "has been guilty of any immoral or dishonorable conduct which would prevent the board, in its sense of honor, from issuing the certificates of practice provided for" in section 5199. When one has been duly convicted in the court of general sessions of a felony, we do not think, said the Supreme Court, that the statute contemplates that his guilt or innocence shall again be determined by the circuit judge in a revocation proceeding. If the defendant was now applying for a license to practice dentistry and possessed all the necessary professional skill, but some years previously had been convicted of rape, it would not be necessary for the Dental Board, a body wholly unlearned in the law and in legal procedure, to disregard the solemn adjudication of guilt made by the court of general sessions, the regular tribunal established under the constitution of this state for the trial of such cases, to try the case again and determine anew the defendant's guilt before it would be warranted in declining to issue a license on the ground that the applicant did not possess the necessary moral character. The conviction is evidence, and we think conclusive evidence, that the defendant did commit the offense.

Finally the defendant takes the position that neither the Dental Board nor the court is authorized under section 5210 to revoke a license to practice dentistry on the sole ground that the holder of the license has been convicted of a crime involving moral turpitude. The point is emphasized that the statute does not use the word "convicted," but reads "has been guilty of any immoral or dishonorable conduct." It may be that the legislature, in framing the statute in question, chose the word "guilty," instead of "convicted," so as to include as a ground for removal or suspension "immoral or dishonorable conduct" of such nature that it would not constitute an indictable offense. But whether or not this was the legislative intent we need not now decide, for manifestly it was intended to include such "immoral or dishonorable conduct" as rape, a felony at common law. We think, said the Supreme Court, the defendant's suggested construction of the statute is illogical and unreasonable and, if adopted, would lead to a result which obviously was not intended by the legislature.

In conclusion the Supreme Court said that another hearing before the circuit judge should be held, at which it will be conclusively presumed that the defendant "has been guilty" of rape. Such constitutes a proper ground for the revocation or suspension of his license. At such hearing, the court continued, the circuit judge will determine whether the defendant's license should be revoked or whether it should be suspended; and if he concludes there should only be a suspension, he shall further determine and fix the term of such suspension. Accordingly, the judgment in favor of the defendant was reversed and the cause remanded.—*South Carolina State Board of Dental Examiners v. Breeland, 38 S. E. (2d) 644 (S. C., 1946).*

Food and Drug Acts: Drugs Misbranded by Accompanying Circular.—The defendant was found guilty of misbranding his drugs in violation of the Federal Food, Drug and Cosmetic Act, and judgment was entered by the district court, S.D. California, central division.

The drugs involved in this case were shipped in interstate commerce on April 25, 1944. However, descriptive leaflets and circulars concerning the material, which amounted to a misbranding of the drugs, had been shipped in interstate commerce the preceding February. The circulars and the drugs had a common source and common destination and were subsequently displayed together. The sole issue, said the court, is whether the drugs and leaflets accompanied each other within the purview of the food and drug act.

In a prior case, the United States circuit court of appeals said:

> The word "accompany" is not defined in the Act, but we observe that among the meanings attributed to the word are "to go along with," "to go with or attend as a companion or associate" and "to concur in association with," Webster's New International Dictionary, 2d Ed.

The food and drug act, continued the district court, has always been liberally construed to protect the consuming public from the avaricious. Prior cases indicate that the courts have not applied the usual rule of strict construction of criminal statutes to this act but have given it a liberal construction and thus enabled the act to accomplish its remedial purpose of protecting the public's health and pocketbook against misbranded foods and drugs. I hold, the court concluded, that the word "accompany" as used in the act means that when a drug and a related circular, having a common source and a common destination, come together at their destination, they are united and become one in so far as the buying public is concerned, each, in effect, accompanying the other, whether they arrived at their common destination simultaneously or otherwise. Accordingly the defendant was found guilty of misbranding a drug contrary to the federal food, drug and cosmetic act.—*United States v. Alberty, 65 F. Supp. 945 (Calif., 1946).*

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Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

16:129-156 (Oct.) 1946

Early Diagnosis of Brain Tumors. W. G. Haynes.—p. 129.
Rheumatic Heart Disease in Children: Recent Advances in Management. J. H. Baumhauer.—p. 135.
Treatment of Whooping Cough. C. K. Pitt.—p. 139.

16:157-192 (Nov.) 1946

Alabama Postwar Planning (Symposium): Part. I. The Situation. M. S. Davie—p. 157.
Id.: Part II. Volunteer Prepayment Insurance. C. A. Grote.—p. 160.
Id.: Part III. Alabama Hospitals. B. F. Austin.—p. 163.
Role of Medical College of Alabama in Alabama Medicine. R. R. Kracke. —p. 168.
Application of Rh Factor in General Practice. A. E. Thomas and J. W. Perry.—p. 173.

American Heart Journal, St. Louis

32:411-544 (Oct.) 1946

Relation Between Circulation Time and Amount of Residual Blood of Heart. B. Gernandt and G. Nylin.—p. 411.
Heart in Primary Systemic Amyloidosis. S. Lindsay.—p. 419.
Observations on Pathogenesis of Edema in Cardiac Failure. F. Reichsman and H. Grant.—p. 438.
Coronary Sinus Rhythm. D. Scherf and R. Harris.—p. 443.
Abnormalities of Respiratory Pattern in Patients with Cardiac Dyspnea. H. E. Heyer.—p. 457.
*Influence of Age on Blood Pressure: Study of 5,331 White Male Subjects. H. I. Russek, M. M. Rath, B. L. Zohman and I. Miller. —p. 468.
T Wave of Precordial Electrocardiogram at Different Age Levels. R. M. Suarez and R. M. Suarez Jr.—p. 480.
*Disadvantages of Thiouracil Treatment of Angina Pectoris. J. R. DiPalma and J. J. MaGovern.—p. 494.
Cardiovascular Defects in Selective Service Registrants. R. H. Eanes, K. H. McGill and M. L. Clark.—p. 504.

Influence of Age on Blood Pressure.—Russek and his co-workers analyzed the blood pressure of 5,331 men between the ages of 40 and 95. They found that normal systolic blood pressure tends to increase with age. The frequency of upper levels of "normal" (140 to 149 mm.) rises appreciably with advancing years. The assumption that normal diastolic blood pressure increases with age is unfounded. Actually a progressive decrease occurs with succeeding decades. The rise in normal systolic pressure and concomitant fall in normal diastolic pressure are primarily the result of progressive diminution in the elasticity of the aorta and its large branches (vascular factor). Physiologic changes in the central nervous system leading to vascular hyperreactibility with advancing years similarly exert an important influence on the blood pressure trends (neurogenic factor). Both mechanisms (vascular and neurogenic) are summated in their effect on systolic blood pressure while exerting opposing influences on diastolic blood pressure. Although the ceiling for normal diastolic blood pressure has been set at 90 mm. of mercury, an even lower level appears applicable after middle age.

Disadvantages of Thiouracil Treatment of Angina Pectoris.—DiPalma and MaGovern employed thiouracil in the treatment of 8 nonhypertensive cardiac patients with anginal pain, all but 1 of whom had normally functioning thyroids. In 4 patients the thiouracil treatment was stopped after less than two months because of toxic skin rashes, severe dyspnea and failure to lower the basal metabolic rate. No benefit on either precordial pain or exercise tolerance was experienced by these 4 patients. The 4 remaining patients were treated for over a year. In general, precordial pain was beneficially affected, at least for a time; at certain times exercise tolerance was doubled and even quadrupled. However, all except 1 lost the increased ability to do work at the end of the one year period. One patient had symptoms resembling coronary occlusion. The disadvantages of thiouracil in patients with normally functioning thyroid glands include toxicity, necessity of close supervision, inability to lower the metabolism, tendency toward water retention (which is deleterious to cardiac patients) and necessity of continuous therapy. Thiouracil is not recommended for angina pectoris as a routine procedure but only when the metabolic rate is elevated.

American Journal of Clinical Pathology, Baltimore

16:477-534 (Aug.) 1946

Recent Developments in Knowledge of Rh-Hr Blood Types: Tests for Rh Sensitization. A. S. Weiner.—p. 477.
Rh Factor as Applied to Operation of Blood Banks. L. J. Unger, M. Weinberg and M. Lefkon.—p. 498.
Alloxan in Experimental Hemochromatosis. P. A. Herbut, J. S. Watson and Ella Perkins.—p. 506.
Physiologic Study of Hematopoiesis in Duck with Malaria. H. H. Rostorfer and R. H. Rigdon.—p. 518.
Development of Resistance to Streptomycin by Aerobacter Cloacae. M. W. Edwards and G. D. Kirk.—p. 527.

16:535-596 (Sept.) 1946

Absorption of Vitamin A Following Enteral Use of Prostigmine in Cystic Fibrosis of Pancreas. H. D. Palmer, W. H. Danielson, Lula O. Lubchenco and E. L. Binkley.—p. 535.
*Observations on Response of Macrocytic Anemias to Folic Acid Therapy. L. Berman, S. D. Jacobson and E. C. Vonder Heide.—p. 550.
Malignant Lymphoma: Analysis of 202 Cases. C. A. Hellwig.—p. 564.
Rh Incompatibility in Heterospecific Pregnancy. J. Gurevitch, Z. Polishuk and D. Hermoni.—p. 574.
Observations on Human Malnutrition. V. D. Sneeden.—p. 580.
Radiation Effects of Atomic Bomb Among Natives of Nagasaki, Kyushu. J. S. P. Beck and W. A. Meissner.—p. 586.

Folic Acid in Macrocytic Anemias.—Berman and his associates used synthetic folic acid in treating 11 patients with macrocytic anemia. They found that those with megaloblastic bone marrow responded to folic acid therapy, but those with normoblastic bone marrow did not respond. They present morphologic criteria for distinguishing megaloblastic from normoblastic erythropoiesis and discuss the chemical and physiologic differences between megaloblasts and normoblasts. Recognition of the presence or absence of megaloblastic development of erythrocytes in the marrow will make it possible to foretell which patients will respond to folic acid.

American J. Digestive Diseases, Fort Wayne, Ind.

13:311-340 (Oct.) 1946

Control of Muscle Spasm and Arthritic Pain Through Sympathetic Block at Nasal Ganglion and Use of Adenylic Nucleotide: Contributions to Physiology of Muscle Metabolism: II. S. L. Ruskin.—p. 311.
Physiologic Derangements in Organic Disease of Intestinal Tract. S. Standard.—p. 320.
*Proctalgias and Allied Noninflammatory Perianal Dyscrasias: Coccygodynia Proctalgia Fugax, Neurogenic Pruritus Ani. E. Granet.—p. 330.
*Pyrosis: Analysis of Its Clinical Significance and Pathogenesis. G. W. H. Schepers.—p. 333.

Proctalgias and Perianal Dyscrasias.—Granet discusses several anal or rectal syndromes not of neoplastic or inflammatory origin. He mentions among others the relationship of coccygodynia to spastic contraction of the muscles attached to the coccyx and in some instances to a bursitis involving these muscles. Treatment by massage of the spastic muscles results in rapid relief of pain and muscle relaxation. In proctalgia fugax attacks of pain are sudden, sometimes awakening the patient out of sleep. Spasm in the region of the rectosigmoidal junction is suggested as the cause, and its psychosomatic nature seems well established. Glyceryl trinitrite or similar antispasmodics may prove effective in therapy. Chronic recurrent anal pruritus occurs in individuals with personality difficulties. This type of neurogenic pruritus may yield to psychotherapy.

Pyrosis.—Schepers reviews the clinical features observed in 100 patients in whom pyrosis was a chronic complaint. He was able to distinguish at least three pathologic conditions which are interdependent in respect to pathogenesis or etiology. In 50 per cent of the cases the endocrine dysfunction could be regarded as the major condition, pathologic change in the

urinary tract was the basic feature in 38 per cent, and in the remaining 12 per cent alimentary tract disease could be incriminated. The author argues that pyrosis may represent a variety of visceral paresthesia referred to the gastric terminals of the splanchnic or the vagal nerves and localized and exteriorized to the terrains of the seventh, eighth and ninth thoracic somatic nerves through the central association between the greater sphlanchnic nerve and the corresponding spinal segments. In this series of cases it was associated with peripheral paresthesias, which responded to the same treatment as that which alleviated the pyrosis.

American Journal of Hygiene, Baltimore

44:183-312 (Sept.) 1946

Epidemic Pneumococcal Pneumonia: I. Description of Epidemic. R. G. Hodges and C. M. MacLeod.—p. 183.
Id.: II. Influence of Population Characteristics and Environment. R. G. Hodges and C. M. MacLeod.—p. 193.
Id.: III. Pneumococcal Carrier Studies. R. G. Hodges, C. M. MacLeod and W. G. Bernhard.—p. 207.
Id.: IV. Relationship of Nonbacterial Respiratory Disease to Pneumococcal Pneumonia. R. G. Hodges and C. M. MacLeod.—p. 231.
Id.: V. Final Consideration of Factors Underlying the Epidemic. R. G. Hodges and C. M. MacLeod.—p. 237.
Serologic Detection of Murine Typhus in Flea Feces. M. Pollard, D. E. Davis and T. A. Olson.—p. 244.
Effect of Dietary Carbohydrates on Dental Flora of Rat. Elizabeth I. Parsons, E. V. McCollum and M. Frobisher Jr.—p. 249.
Epidemiology of Acute Respiratory Infections Conditioned by Sulfonamides: VII. Effects of Sulfadiazine on Groups A and G Hemolytic Streptococci. M. Siegel.—p. 257.
Plasmodium Elongatum in Pekin Duck. F. Wolfson.—p. 268.
Studies of Plasmodium Cynomolgi in Rhesus Monkey Macaca Mulatta: Fruma Wolfson and Mary Whitebread Winter.—p. 273.
Relationship Between the Number of Parasites and Parasitized Erythrocytes in Avian and Simian Malaria. Fruma Wolfson and Marie Cakrtova.—p. 301.

American Journal of Medical Sciences, Philadelphia

212:257-384 (Sept.) 1946

*Folic Acid (Synthetic L. Casei Factor), Essential Panhematopoietic Stimulus: Experimental and Clinical Studies. C. A. Doan.—p. 257.
Primary Systemic Amyloidosis: Jaundice as Rare Accompaniment. J. Orloff and L. Felder.—p. 275.
*Positive Reactions to Kahn Test for Syphilis—Their Incidence and Meaning in Healthy American Men: Survey of 82,070 U. S. Maritime Service Enrollees. I. J. Wolman.—p. 280.
Intestinal Parasites Diagnosed at Army General Hospital in South Pacific. M. Zarrow and H. Rifkin.—p. 289.
Effect of Graded Doses of Thyroxin on Experimental Goiters Induced by Promizole. G. M. Higgins and Olive R. Jonesson.—p. 294.
Note on Hippuric Acid Synthesis in Senility. K. Stern, J. S. Tyhurst and Brigitte A. Askonas.—p. 302.
Activity of Penicillin in Intranasal Pneumococcus Infection of Mice. M. Buck, N. Ercoli, D. R. Kelly and others.—p. 306.
Succinylsulfathiazole in Nutrition of Rat. L. D. Wright and Helen R. Skeggs.—p. 312.
Effect of Citrate on Reactions of Lead with Blood Cells and Plasma. R. A. Mortensen.—p. 315.
Alteration of Electrocardiographic P Waves in Acute Rheumatic Fever. J. J. Sampson and P. C. Caplan.—p. 321.
Evidence of Maternal Rh Sensitization Without Evidence of Hemolytic Disease in the Newborn. D. H. Kariher and Dorothy I. Miller.—p. 327.
Response to Penicillin by Typhoid Carrier: Studies on Penicillin Sensitivity of Strains of Typhoid Bacilli. N. W. Riser, R. F. Farrington and B. B. Breese.—p. 331.
Bacteriologic, Clinical and Pathologic Experience with 86 Sporadic Cases of Salmonella Infection. A. Angrist and Mollie Mollov.—p. 336.
Hookworm Infections in Troops Returning from Pacific. H. Most, J. M. Hayman Jr. and T. B. Wilson.—p. 347.
Fibrocystic Disease of Pancreas. F. W. Wiglesworth.—p. 351.
Maternal Disease as Principle in Epidemiology of Congenital Anomalies, with Review of Rubella. W. L. Aycock and T. H. Ingalls.—p. 366.

Folic Acid (Synthetic L. Casei Factor) a Panhematopoietic Stimulus.—In analyzing clinical and experimental studies with folic acid as derived from spinach, liver, yeast, other natural sources and now the synthetic Lactobacillus casei factor, Doan found that it becomes increasingly apparent that we are dealing with one of the more fundamental molecules essential to the normal metabolism of all cell types in marrow and in young, actively growing cells and tissues generally. In the absence of "sufficient" L. casei factor due to extrinsic dietary deprivation or with intrinsic interference in absorption, a cellular inadequacy develops in mammalian bone marrow. Many other factors, including infections, modify the relative clinical stability or instability of each human organism. The physician must search for the "balance of power" among the knowable factors in the equation, and when this is done the problem can be solved.

Kahn Test for Syphilis in Healthy Men.—A survey has been made of the meaning of 783 positive reactions to the Kahn standard serologic test for syphilis encountered in a population of 82,070 consecutively examined male maritime enrollees aged 16 to 54. Study of the men with positive serums indicated that 40 per cent had single positive reactions of questionable authenticity, 13 per cent had nonsyphilitic persistently positive reactions, 7 per cent had congenital syphilis and 40 per cent had acquired syphilis. Thus in one laboratory the detection of a positive or doubtful response to a Kahn standard serologic test led to the diagnosis of syphilis in 47 per cent, or less than half, of a group of healthy American men. Weakly positive reactions proved to mean syphilis in only 20 per cent of the group, whereas strongly positive reactions proved to mean syphilis in 80 per cent of the group.

212:385-512 (Oct.) 1946

Thyroid and Blood Regeneration in Rat. A. S. Gordon, Patricia C. Kadow, Grace Finkelstein and H. A. Charipper.—p. 385.
Use of Radon Ointment in Treatment of Late Irradiation Ulcers. D. Kirsh, J. F. Mahoney and E. P. Pendergrass.—p. 395.
*Addison's Disease in the Negro. J. W. Conn and K. P. Mathews.—p. 404.
*Use of Agglutination Inhibition Test in Studying Effects of Vaccination Against Influenza. A. L. Florman, Agnes Poindexter and F. E. Council.—p. 409.
Electrocardiographic Effects of Prostigmine. D. Goldfinger and P. H. Wosika.—p. 418.
Toxic Effects of Prolonged Ingestion of DDT on Dogs, with Special Reference to Lesions in Brain. W. Haymaker, A. M. Ginzler and R. L. Ferguson.—p. 423.
*Late Neuronitis Following Proved and Suspected Cutaneous, Faucial and Wound Diphtheria. J. J. Sampson.—p. 432.
*Needle Biopsy of Liver. W. D. Davis, R. W. Scott and H. Z. Lund.—p. 449.
Plasma Proteins: I. Alteration in Diabetic Retinitis. R. W. Schneider, Lena A. Lewis and E. P. McCullagh.—p. 462.
Fallacy of the Exton-Rose Glucose Tolerance Test. P. H. Langner Jr., M. J. Romansky and E. D. Robin.—p. 466.
Analysis of Incidence and Causes of Death in Acute Psychopathic Hospital. L. Madow and J. Stouffer.—p. 471.
Effect of Aminophylline on Prothrombin Time in Man. R. W. Breytspraak and F. S. Greenspan.—p. 476.
Tumors of Skin: Part II. Review of Recent Literature. H. Beerman.—p. 479.
Decline of Acute Surgical Mastoiditis. N. D. Fabricant.—p. 506.

Addison's Disease in the Negro.—Conn and Mathews think that the occurrence of Addison's disease in the Negro is far greater than is indicated by the few cases reported in the literature. It is easily understandable that when dealing with Negro patients the possibility of Addison's disease would suggest itself less frequently than in the case of white persons, since pigmentation of the skin is usually one of the most striking manifestations of the disease. The authors report the occurrence of Addison's disease in 5 Negroes and stress that physicians should be on guard for the recognition of this disease in Negroes.

Agglutination Inhibition Test in Vaccination Against Influenza.—Immunologic data were obtained by Florman and his co-workers with the aid of an agglutination-inhibition test from 89 persons who had been given a concentrated influenza virus vaccine containing two type A (PR-8 and Weiss) strains and one type B (Lee). This information was analyzed in relation to clinical observations associated with the administration of the vaccine. Almost two thirds of the group complained of either local or systemic reactions shortly after vaccination. However, these symptoms did not seem to be the result of an antigen-antibody reaction involving agglutination-inhibition antibody. Two serologically proved instances of type B influenza infection occurred during the fifth week following vaccination. Both were in men who had not produced high levels of antibody for the B component of the vaccine. Agglutination-inhibition antibodies for the type A viruses tended to appear earlier than for type B. Administration of the vaccine did not change the Kahn flocculation serologic test for syphilis reagin titer in the 59 persons so studied. Three weeks after vaccination 83 (93 per cent) of the group had developed fourfold or greater rises in antibody for at least one component of the

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vaccine. The serums were also tested against recently isolated type A and type B viruses (Olsen and Saha). The results indicated either that the Saha strain is antigenically more nearly like the Lee than the Pr-8 and Weiss are like the Olson or that the antibody response evoked by the Lee virus is immunologically broader than that of the A strains in the vaccine. Among those who responded to the vaccine there were some who did so to all the components of the vaccine, some who did so only to certain ones and a few who did not produce antibodies to the viruses in the vaccine as well as they did for the related Olson and Saha strains. The unpredictability of this phenomenon presents a serious problem if the level of circulating agglutination-inhibition antibody produced is indicative of the amount of protection against infection afforded by a vaccine.

Late Neuronitis Following Diphtheria.—Sampson presents observations on 20 cases of late polyneuronitis which developed from one to three months after proved or suspected cutaneous or faucial diphtheria. This syndrome differs from the early diphtheria neuritis which occurs during or within the first month after the attack of diphtheria. Fifteen of the 20 patients had acquired the pharyngeal or cutaneous diphtheria in the Southwest Pacific. The initial symptoms usually were numbness and paresthesias of the hands and feet. Partial electrical reactions of degeneration of the involved muscles were obtained in all the severe cases. The segmental character of motor and sensory involvement, generally C_1 to T_2 and L_5 to S_1 during the early and most severe stages of the disease, receded to signs of irregular distal peripheral neuritis. Recovery was generally abrupt, and the commonest residual signs after four to seven months' observation were absent achilles and patellar reflexes and diminished vibratory sense in the toes. Massage and passive and active exercises throughout the course of the disease apparently hastened the return to normal motor function and prevented muscle atrophy.

Needle Biopsy of Liver.—Needle biopsies of the liver have been done on 68 patients in the Cleveland City Hospital since 1939. Biopsies have been most useful in the diagnosis of cancer of the liver and in establishing the nature of diffuse parenchymal liver disease, including cirrhosis. Fatalities were not observed in this series.

American J. Obstetrics and Gynecology, St. Louis

52:529-706 (Oct.) 1946. **Partial Index**

Controversial Factors in Management of Fundal Carcinoma. L. C. Scheffey, W. J. Thudium, D. M. Farell and G. A. Hahn.—p. 529.
Clinical Evaluation of Ectopic Pregnancy. A. A. Marchetti, Katherine Kuder and Alberta Kuder.—p. 544.
Endometriosis in Association with Pregnancy. F. R. Lock and R. T. Myers.—p. 556.
Manual Removal of Placenta: A Benign Procedure. C. W. Sewall and D. Coulton.—p. 564.
*Relationship of Maternal Weight Gain to Weight of Newborn Infant. J. Klein.—p. 574.
*Adenomyosis of Uterus: Study of 52 Reported Cases and Review of Literature. S. D. Spatt.—p. 581.
Complications and Fetal Mortality in 136 Cases of Multiple Pregnancy. E. W. Munnell and H. C. Taylor Jr.—p. 588.
Report on 2,798 Vaginal Hysterectomies. Z. B. Campbell.—p. 598.
Arrhenoblastoma of Ovary, with Report of 2 Cases. Georgianna Seegar Jones and H. S. Everett.—p. 614.
Study of 500 Vaginal Hysterectomies. H. C. Falk and I. A. Bunkin. —p. 623.
Analysis of 257 Cases of Sterility. S. G. Winson.—p. 631.
*Saddle Block Anesthesia with Nupercaine in Obstetrics. R. T. Parmley and J. Adriani.—p. 636.
Addition of Penicillin Sodium to Anesthetic Agent for Local Infiltration Anesthesia: Preliminary Report. V. J. Reynolds.—p. 641.
Psychoneurotic Symptoms Following Hysterectomy. F. Wengraf.—p. 645.
Respiration During First Hour of Life. R. H. Gottschalk.—p. 651.
*Early Puerperal Rising. A. G. King.—p. 657.
*Relation of Early Rising to Morbidity in Cesarean Section. D. M. Headings and R. E. Palmer.—p. 661.
Composition of Human Placenta: II. Lipid Content. J. P. Pratt, Mildred Kaucher, Elsie Moyer and others.—p. 665.
Effect of Essential Hypertension on Pregnancy. J. A. Sharkey and Catherine Hess.—p. 672.

Relationship of Maternal Weight Gain to Weight of Newborn Infant.—Klein studied 567 cases and found no correlation between the maternal weight gain during pregnancy and the weight of the baby at birth.

Adenomyosis of Uterus.—Spatt presents observations on 52 cases of adenomyosis uteri in which the endometrium was carefully examined, and he also reviews the literature. He concludes that adenomyosis uteri occurs in 5 to 10 per cent of all myomatous uteri. Like endometrial hyperplasia, it is most common in the fifth decade of life. Metromenorrhagia and dysmenorrhea are the most frequent complaints in adenomyosis uteri. Some patients have both these complaints. The sustained interval nonsecretory endometrium is a part of the process leading to endometrial hyperplasia. The early interval endometrium seems to occur in younger women and endometrial hyperplasia in older women. Adenomyosis is associated with anovulatory menstrual cycles in a large percentage of cases, indicating that either hyperestrinism or lack of corpus luteum hormone is an important factor in the genesis of adenomyosis uteri. It cannot be said definitely which one is responsible. The high incidence of fibroids in adenomyosis uteri seems to indicate some relationship; however, this association is not frequent enough to suggest that one factor is responsible for both.

Saddle Block Anesthesia.—The term saddle block anesthesia is applied to anesthesia confined exclusively to the perineal area. Parmley and Adriani used it with gratifying results in 135 normal primiparas or multiparas. They describe the technic for producing prolonged anesthesia and analgesia by using nupercaine. The ease and simplicity of induction, the safety allowed by the low dosage of the drug and the exact localization of the distribution of anesthesia make the use of this block the technic of choice where spinal anesthesia is preferred or desired in obstetrics.

Early Puerperal Rising.—The routine by which King prepared 221 women for early puerperal rising included standing for one minute the first day post partum, sitting in a chair for five minutes the second day, abdominal exercises in bed, and two five minute sitting periods the fourth day, walking about and toilet privileges on the fifth or sixth day, a shower the seventh day and discharge from the hospital on the eighth day when desired or necessary. The incidence of complications, subinvolution, prolonged lochia rubra, episiotomy breakdown, infections and uterine retroversion was not greater than usual. It is felt that early puerperal rising in uncomplicated cases of childbirth is desirable and without danger or unfavorable sequelae.

Early Rising and Morbidity in Cesarean Section.—Headings and Palmer found that when patients who had undergone cesarean section were allowed out of bed early the morbidity was only 2.8 per cent, compared with 9 per cent when early rising was not encouraged. No complications developed from the routine practice of getting all patients out of bed on the first postoperative day. Early rising allows full use of the available hospital facilities. The patients are grateful not only for lessened expense but also because of the definite improvement in the postoperative sense of well-being and avoidance of the weakness so noticeable in patients kept in bed twelve or fourteen days.

American Journal of Orthopsychiatry, New York

16:571-760 (Oct.) 1946

Psychologic Counseling of College Students. P. Blos.—p. 571.
Recent Research in Nondirective Therapy and Its Implications. C. R. Rogers.—p. 581.
Basic Aspects of Nondirective Therapy. A. W. Combs.—p. 589.
Directive and Nondirective Psychotherapy: Role of Therapist. H. H. Anderson.—p. 608.
Counseling and Therapy. L. G. Lowrey.—p. 615.
Consulting Psychologist in Industry. C. E. Evans.—p. 623.
Personality and Psychosomatic Disturbances Among Industrial Personnel. A. Weider and B. Mittelmann.—p. 631.
Observations from a Veterans' Clinic on Childhood Factors in Military Adjustment. J. S. Kasanin, C. Rhode and Ernestine Wertheimer. —p. 640.
Jealousy in Children. H. Vollmer.—p. 660.
Authority in Treatment of Delinquents. W. Bromberg and T. C. Rodgers. —p. 672.
Incidence of Hidden Delinquency. F. J. Murphy, Mary M. Shirley and Helen L. Witmer.—p. 686.
Agency Initiated Treatment of Potentially Delinquent Boy. Margaret G. Reilly and R. A. Young.—p. 697.
Brief Relationship Therapy in Military Setting. D. G. Prugh and B. Brody.—p. 707.

American Journal of Physiology, Baltimore

147:1-236 (Sept.) 1946. **Partial Index**

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Studies on Nutritive Value of Lactose and Galactose with Single-Food Choice Method. B. H. Ershoff.—p. 13.

Relation of Gas Tension and Hydrostatic Pressure to Intravascular Bubble Formation. W. D. McElroy and A. H. Whiteley.—p. 19.

Oxygen Consumption and Mechanical Efficiency of Heart Before and During Heart Failure. W. Wise, J. Meyer, L. N. Katz and others. —p. 28.

Absence of Rapid Deterioration in Moderately Active Young Men on Restricted Intake of B Complex Vitamins and Animal Protein. R. C. Cogswell, G. H. Berryman, C. R. Henderson and others.—p. 39.

Distribution of Water and Fat in Skin and Muscle of Dog During Chronic and Acute Dehydration. B. De Boer.—p. 49.

Arterial Oxygen Pressure During Pure O_2 Breathing. J. C. Fasciolo and H. Chiodi.—p. 54.

Biochemical Changes in Blood of Rats After Reapplication of Limb Tourniquets. R. K. Meyer, W. H. McShan, A. Goldman and E. G. Shipley.—p. 66.

Evidence That Major Portion of Gastric Potential Originates Between Submucosa and Mucosa. W. S. Rehm.—p. 69.

Comparative Study of Effects of Oxygen Lack on Peripheral Nerve. E. B. Wright.—p. 78.

Unitary Analysis of Pulmonary Volume Receptors. G. C. Knowlton and M. G. Larrabee.—p. 100.

Electrical Manifestations of Cerebellum and Cerebral Cortex Following DDT Administration in Cats and Monkeys. F. Crescitelli and A. Gilman.—p. 127.

Bicarbonate and Renal Regulation of Acid Base Balance. R. F. Pitts and W. D. Lotspeich.—p. 138.

Amino Nitrogen in Liver and Muscle of Rats in Shock After Hemorrhage. J. A. Russell and C. N. H. Long.—p. 175.

Determination of Physiologically Effective Pressures of Oxygen and Carbon Dioxide in Alveolar Air. R. L. Riley, J. L. Lilienthal Jr., D. D. Proemmel and R. E. Franke.—p. 191.

Carbon Dioxide Production of Humans at Sea Level and at Low Barometric Pressures. W. E. Berg and S. F. Cook.—p. 217.

Influence of Thiamine on Action of Acetylcholine on Muscle. D. P. Sadhu.—p. 233.

American Journal of Psychiatry, New York

103:145-288 (Sept.) 1946

Psychiatry in Industry. F. W. Dershimer.—p. 145.

Current Trends in Industrial Psychiatry. L. E. Himler.—p. 149.

Epilepsy: Treatment with New Drug: 3-Methyl 5,5-Phenyl-Ethyl-Hydantoin (Phenantoin). H. L. Kozol.—p. 154.

*Two New Drugs in Epilepsy Therapy. W. G. Lennox.—p. 159.

Further Observations on Use of Tridione in Control of Psychomotor Attacks. R. N. DeJong.—p. 162.

Incidence of Neuropsychiatric Disease in Demobilized Veteran: Study of 10,000 Army Separatees. I. F. Burton, M. T. Eaton Jr. and H. G. McMahan.—p. 165.

Rehabilitation of Military Offenders at Ninth Service Command Rehabilitation Center. I. I. Weiss.—p. 172.

Study of Modification of Mental Illness by Intercurrent Physical Disorders in 100 Patients. H. E. Clow and C. T. Prout.—p. 179.

Nail Biting: Incidence, Allied Personality Traits and Military Significance. J. M. Hill.—p. 185.

Psychosomatic Approach to Problem of Stuttering in Psychotics. D. A. Barbara.—p. 188.

Comparative Incidence of Neuropsychiatric Casualties in World War I and World War II. J. W. Appel, G. W. Beebe and D. W. Hilger. —p. 196.

Psychiatry in Hanford. W. A. Noehren.—p. 200.

Men with Brain Damage. J. A. Aita.—p. 205.

Japanese Military Psychiatry in Korea. M. M. Berger.—p. 214.

Prefrontal Lobotomy: Preliminary Appraisal of Behavioral Results. W. C. Halstead, H. T. Carmichael and P. C. Bucy.—p. 217.

*Transitory Schizophrenias Produced by Bromide Intoxication. M. Levin. —p. 229.

Orbital Cortex Syndrome Following Leukotomy. F. Reitman.—p. 238.

Irrelevant and Metaphorical Language in Early Infantile Autism. L. Kanner.—p. 242.

Glucose Tolerance in Chronic Alcoholism. S. C. Karlan and C. Cohn. —p. 247.

New Drugs in Epilepsy Therapy.—The first of the two drugs which Lennox says increase the range and the effectiveness of the control of epileptic seizures is Tridione. This drug has proved peculiarly effective in the control of seizures of the petit mal type: pyknoepilepsy, myoclonic jerks and akinetic epilepsy. Eighty-four per cent of the patients with petit mal were to some degree better. In contrast, grand mal convulsions were not helped or made worse. Psychomotor seizures were occasionally aided by Tridione combined with an anticonvulsant drug. The second drug, methyl phenyl ethyl hydantoin (Mesantoin), did not help petit mal, but in approximately one third of patients subjected to frequent major seizures it has replaced diphenyl hydantoin sodium (Dilantin) with profit. The benefit resulted either from a reduction in the frequency of convulsions or from an absence of the unpleasant side effects of either muscular incoordination or gum hypertrophy. Generalized rash or somnolence were side effects which limited the usefulness of the drug in many instances.

Transitory Schizophrenias in Bromide Intoxication.—According to Levin, bromide intoxication produces a variety of psychiatric syndromes. A new syndrome is described by the author on the basis of 13 cases. This is a psychosis of predominantly paranoid coloring which, to the examiner who does not know the history and laboratory findings and has not yet seen the outcome, has all the earmarks of an "ordinary" paranoid schizophrenia, from which it differs only in that it is a transient psychosis which has supervened during bromide intoxication and clears up fairly soon after discontinuance of the drug.

American Journal of Public Health, New York

36:1105-1244 (Oct.) 1946

Trend of Tuberculosis Association Programs. L. I. Dublin.—p. 1105.

Procedure for Bacteriologic Examination of Brined, Salted and Pickled Vegetables and Vegetable Products. J. L. Etchells and I. D. Jones. —p. 1112.

Small Sample Surveys as Adapted to Cancer Program. Evelyn A. Potter.—p. 1124.

Contributions of War Experience to Our Knowledge of Mental Hygiene. G. S. Stevenson.—p. 1129.

*Treatment of Pediculus Capitis in School Children with DDT Powder. A. D. Kaiser.—p. 1133.

Eight Years' Experience in Licensing of Clinical Laboratory Technicians. M. H. Merrill.—p. 1135.

Penny Plan for Health Education in Industry. J. I. Boxer.—p. 1143.

Report on Hydrant Stops. L. G. Shields and F. G. Legg Jr.—p. 1147.

Factors Affecting the Susceptibility to Bacillary Dysentery. T. Thale and L. Oppe.—p. 1150.

Epidemiologic Study of Outbreak of Pertussis in Public School. Anne Clark Rodman, W. L. Bradford and G. P. Berry.—p. 1156.

DDT for Pediculus Capitis in School Children.—According to Kaiser pediculosis may be one of the greatest causes of absenteeism in schools. To simplify the treatment a preparation of DDT powder (10 parts of DDT and 90 parts of inert powdered talc) was sprayed on the child's hair, a paper towel being placed over the eyes to prevent irritation. The head was kept covered until bedtime. In the morning the hair was combed with a fine comb to remove the dead lice and as many eggs as possible. On the seventh day another application of DDT powder is made, following a shampoo on the previous evening. At the end of the second week another application of DDT is made if necessary. Thus far 350 children have been treated with this method.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:419-554 (Oct.) 1946

Dynamic Concept of Thoracic Topography: Critical Review of Present Day Teaching of Visceral Anatomy. E. Lachman.—p. 419.

*Porencephaly. E. P. Pendergrass and C. R. Perryman.—p. 441.

Pneumatosis Intestinalis: Its Roentgenologic Diagnosis. H. H. Lerner and A. I. Gazin.—p. 464.

*Secondary Myelofibrosis with Progressive Generalized Osseous Eburnation. S. R. Bersack and H. R. Feinstein.—p. 470.

Roentgen Diagnosis of Volvulus of Sigmoid with Intestinal Obstruction. M. Ritvo and J. L. Golden.—p. 480.

Roentgen Diagnosis of Diseases of Neck of Bladder. A. Pereira. —p. 489.

How Exact Is Roentgen Diagnosis of Heart Valve Calcifications? L. Walk.—p. 500.

Effects of Beta Irradiation on Rabbit's Eye. W. F. Hughes Jr. and C. E. Ilief.—p. 502.

*Cancer of Cervix: Study of Effect of Interstitial Radon Needles as Compared with Roentgen Therapy Given Through Intravaginal Cones. H. C. Taylor Jr. and G. H. Twombly.—p. 513.

Treatment of Cutaneous Hemangioma with Radium. E. Caceres.—p. 523.

Porencephaly.—The 29 cases of porencephaly reviewed by Pendergrass and Perryman were all studied by encephalography and/or ventriculography, and in 16 craniectomy was done. Unilateral change in the thickness of the skull was the most common observation in the conventional roentgenograms of patients with porencephaly. The various types of porencephaly have been classified as "lobe," "interlobe" and "hemisphere." Cortical or subcortical atrophy, enlargement of the ventricles and arachnoiditis were found in association with porencephaly and may be contralateral, homolateral or bilateral and localized or generalized. There was usually a slight shift of the ven-

tricles and midline structures more often to the same side but frequently to the opposite. Porencephaly must always be considered in the differential diagnosis of mass, cystic and contracting lesions involving the brain.

Secondary Myelofibrosis.—Bersack and Feinstein's patient was a man aged 55 who had secondary myelofibrosis with generalized osseous eburnation as a result of skeletal metastases of prostatic carcinoma. Only 2 similar cases have been presented in the English literature. The prognosis in such cases is worse than in the average carcinoma of the prostate. The course varies between one and one and one-half years. Myelofibrosis has two prerequisite elements; namely, destruction of bone marrow and an attempt at compensation by the remaining hemopoietic tissue, inclusive of metaplasia in the spleen and the liver. The cardinal symptoms are weakness, bone pains, a varying degree of splenomegaly and a refractory anemia with nucleated red blood cells and immature white blood cells in the peripheral blood. Histopathologically the involved bone shows an increase in width and number of the trabeculae, with linear calcium deposition. The lamellae present normal lacunae and bone cells. A conspicuous feature is the scarcity or complete absence of lining osteoblasts and osteoclasts. The marrow spaces contain fibrous tissue with sparsely scattered infiltrative foci of tumor cells.

Treatment of Cervical Cancer.—Taylor and Twombly divided all cases of primary cervical cancer observed in their gynecologic clinic during 1943 and 1944 into two equal and comparable groups. One group was treated with divided dose roentgen therapy to the pelvis and intravaginal roentgen therapy to the parametria and cervix through special cones. This program of roentgen therapy was followed by intracervical radium. The second group also received divided dose external roentgen therapy and intracervical radium, but the intravaginal roentgen treatments were replaced by interstitial radon therapy delivered by means of needles inserted into the parametria at the time the radium was applied to the cervical canal. The patients treated with needles had more severe rectal symptoms, more bladder symptoms and more local necrosis, hemorrhage and pain than did those treated with vaginal cones. Furthermore, the mortality was greater in those treated with needles, and the authors have abandoned this treatment in favor of the other one.

American Journal of Surgery, New York

72:497-634 (Oct.) 1946

*Importance of Sulfhydryl in Treatment of Corneal and X-Ray Burns. A. E. Cruthirds.—p. 500.
Total Excision of Patella for Fracture: Report of 14 Cases. W. R. MacAusland.—p. 510.
Anorectal Abscesses: Discussion and Treatment. J. F. Wenzel.—p. 517.
*Distal Ectopic Pregnancy: Implantation of Ovum in Cervical Mucosa. P. Schneider.—p. 526.
Comparison of Silk and Nylon as Suture Material. M. N. Foote, G. R. Gerst and S. W. Meyer.—p. 540.
Management of Sharp Pointed Foreign Bodies in Gastrointestinal Tract. R. R. Best.—p. 545.
Why Hernias Recur. A. H. Iason.—p. 550.
Vascular Trauma. E. E. Lazarus.—p. 562.
Traumatic Hemothorax. H. A. Brodkin.—p. 569.
Transverse Incision in Abdominal Surgery: Five Year Study. P. Pernworth.—p. 573.
Noninfectious Iliopectineal Bursitis. D. C. Hucherson and F. R. Denman.—p. 576.
Blood Cell Jel for Chronic Surface Ulcers. J. G. Kanski.—p. 580.
Diagnosis of Thenar Space Abscess. W. R. Moses.—p. 583.

Sulfhydryl in Treatment of Corneal and X-Ray Burns.—A study based on five years of clinical application of a sulfhydryl therapy in more than 500 cases of burns involving the eyes and adjacent areas has convinced Cruthirds that the danger of scarring may be greatly reduced. The product used, hydrosulphosol, presents sulfur in a "free" colloidal state with a high concentration of sulfhydryl suggesting availability of sulfur in a form that can be utilized by the body in the synthesis of sulfur-containing amino acids. Sulfur-containing compounds constitute almost one half of the mineral content of the lens and are connected with tissue respiration, oxygen transport, detoxication, capsular permeability, protein synthesis and general metabolic efficiency. In conjunction with penicillin, hydrosulphosol has proved effective also in corneal ulcers with results not observed with penicillin alone. There has been no evidence of toxic reactions following free and repeated application of this sulfhydryl bearing solution. Hydrosulphosol is superior to other methods in its ability to heal x-ray burns in that it heals with less chance of development of symblepharon, and it heals faster and without scarring and infection. The application of a 1:1 spray of hydrosulphosol solution establishes quickly a dry, flexible coating. This coating has proved to be the only covering needed.

Ectopic Pregnancy in Cervical Mucosa.—Schneider reviewed the literature since 1926 and found that in only 10 of 30 reported cases could cervical implantation be proved. These 10 plus the 1 reported by the author in 1926 and the 1 described here are the basis for the present discussion on the anatomic and clinical data of the cervical implantation of the ovum. This type of ectopic gestation is almost always associated with violent symptoms. Whether a cervical pregnancy terminates spontaneously by rupture of the extremely thinned cervical wall or by internal rupture of the gestation sac (abortion) or whether it is interrupted artificially, the leading and most alarming symptom is always the violent hemorrhage associated with it.

American Journal of Tropical Medicine, Baltimore

26:543-748 (Sept.) 1946. **Partial Index**

Military Amebiasis: Observations on Complete Courses of 40 Cases, with Results of Treatment. E. D. Palmer.—p. 543.
Diagnosis of Schistosomiasis Japonica: III. Technics for Recovery of Eggs of Schistosoma Japonicum. E. C. Faust and J. W. Ingalls, with Assistance of J. K. See.—p. 559.
Development of Virus of Yellow Fever in Hemagogus Mosquitoes. M. Bates and M. Roca-Garcia.—p. 585.
Laboratory Transmission of Yellow Fever Virus by Hemagogus Splendens. C. R. Anderson and E. Osorno-Mesa.—p. 613.
*Distribution of Murine Typhus in Rats and in Humans in San Antonio. D. E. Davis and M. Pollard.—p. 619.
Pathologic Study of Natural Amebic Infection in Macaques. V. P. Bond, W. Bostick, E. L. Hansen and H. H. Anderson.—p. 625.
*Asiatic Cholera: Clinical Study and Experimental Therapy with Streptomycin. H. A. Reimann, G. C. T. Chang, Liang-Wei Chu, P. Y. Liu and Ying Ou.—p. 631.
*Studies on Atabrine (Quinacrine) Suppression of Malaria: I Consideration of Individual Failures of Suppression. F. B. Bang, N. G. Hairston, J. Maier and W. Trager.—p. 649.
Longevity of Killing Effect of DDT for Mosquitoes Contacting Screen Wire Painted with DDT Solutions. J. E. Elmendorf, P. E. Marucci, J. B. Griffin and others.—p. 663.
Study of Hookworm Infection in Navy and Marine Personnel on Guam. N. R. Stoll, E. H. Loughlin, A. H. Harris and B. M. Chenoweth Jr.—p. 687.
Experiments to Determine Potential Mosquito Vectors of Wuchereria Bancrofti in Continental United States: Part 2. W. L. Newton and I. Pratt.—p. 699.
Tolerance of Fowls for Moderate Infections of Intestinal Helminths. J. E. Ackert and C. L. Wisseman Jr.—p. 721.
Emergency Sterilization of Drinking Water with Heteropolar Catonic Antiseptics: II. Persistence of Germicidal Action Within Intestinal Tract and Removal of Excess Drug with Adsorbing Agents. F. J. Moore and J. Marmorston with technical assistance of F. Golden and N. Anderson.—p. 729.
Causes of Death on Isthmus of Panama, Based on 14,304 Autopsies Performed at Board of Health Laboratory Gorgas Hospital, Ancon, Canal Zone, During Forty Year Period 1904-1944. B. H. Kean.—p. 733.

Murine Typhus in the Rat and in Man.—Rats were collected throughout San Antonio and tested for complement fixing antibodies for typhus. The human cases were investigated to determine the most probable source of infection. Davis and Pollard observed that the fairly good residential areas and the business districts had about 40 per cent of rats positive. The slum district had about 60 per cent of the rats positive. Human cases originated in all districts and showed a general correlation with the percentages of positive rats.

Streptomycin in Asiatic Cholera.—As Reimann and his associates have noted, cholera, when properly treated, is a disease of short duration and of low mortality. The restoration of salts and water and good medical care are the most valuable therapeutic procedures. The behavior of the disease suggests that dehydration and the depletion of salts are of far greater importance than toxemia in the causation of death. Other than a prompt reduction of the numbers of vibrios in the stools and slight shortening of the attacks, there is no evidence that streptomycin given orally or parenterally influences the disease. Strains of Vibrio comma vary greatly in their resistance to streptomycin in vitro.

Quinacrine Suppression of Malaria: Individual Failures.—Bang and his co-workers studied the efficacy of quinacrine suppression of malaria in American and Australian troops in New Guinea and Australia. The concentration of quinacrine present in the plasma of those developing malaria despite supposed suppression is compared with data from adequately suppressed troops. This comparison shows that clinical malaria develops in the presence of inadequate amounts of quinacrine. The development of malaria in a person cannot be taken as proof that he has failed to take quinacrine regularly. Variation of drug level obtained with a standard dose is so great that, granting concentration is related to protection, a small percentage would be unprotected by the standard dosage of 0.7 Gm. of quinacrine per week. Studies of the concentration of quinacrine in the plasma fail to indicate need for a dosage greater than 0.1 Gm. per day.

Annals of Allergy, Minneapolis

4:339-408 (Sept.-Oct.) 1946

Integration and Differentiation of Allergic Phenomena. R. R. Doerr.—p. 339.
Botanic Survey of Southern California. W. S. Small and Grace M. Small.—p. 352.
Chromidrosis Associated with Ragweed Hyposensitization. Helen C. Hayden.—p. 372.
Allergic Causes of Pruritus Ani. F. R. Rugeley.—p. 374.
Quantitative Lepromin Test in Leprosy. M. Salazar Mallen and L. Rosas Prieto.—p. 379.
*Contact Dermatitis from Japanese Rifles. F. Hinman Jr.—p. 384.

Contact Dermatitis from Japanese Rifles.—Hinman observed 7 cases of itching vesicular dermatitis, usually of the hands and forearms, among 150 men who had refinished the stocks of Japanese guns with scrapers and sandpaper. The lesions responded to removal of the allergen and local treatment. Since many of these rifles are in the hands of men returned from overseas, scattered cases will probably be seen throughout the country. Care should be used by individuals with known sensitivity to plant and other allergens, and that of poison oak or ivy in particular, when handling articles coated with Japanese lacquer or varnish.

Annals of Surgery, Philadelphia

124:607-798 (Oct.) 1946

Presidential Address: Treatment of Fractures. W. Darrach.—p. 607.
Pharyngoesophageal Diverticulum: Its Management and Complications. F. H. Lahey.—p. 617.
Diverticula of Lower Thoracic Esophagus: Report of Six, Four of Which Were Operated on. R. M. Janes.—p. 637.
Carcinoma of Midthoracic Esophagus: Its Treatment by Radical Resection and High Intrathoracic Esophagogastric Anastomosis. R. H. Sweet.—p. 653.
*Bronchiogenic Carcinoma. G. E. Lindskog.—p. 667.
Palliative Gastrectomy in Selected Cases of Gastric Ulcer. R. Colp and L. J. Druckerman.—p. 675.
*Subtotal Gastrectomy for Duodenal Ulcer. A. W. Allen and C. E. Welch.—p. 688.
Congenital Hypertrophic Pyloric Stenosis. E. J. Donovan.—p. 708.
*Late Results in Treatment of Ulcerative Colitis. H. W. Cave.—p. 716.
Diverticulitis of Colon. J. J. Morton Jr.—p. 725.
Resection of Abdominal Carcinomas Involving Liver and Spleen Secondarily. A. Brunschwig and D. R. Morton.—p. 746.
Definitive Surgery of Large Intestine Following War Wounds. L. C. Roettig, B. F. Glasser and C. O. Barney.—p. 755.
Early Ambulation in Abdominal Surgery. J. C. Burch and H. C. Fisher.—p. 791.

Bronchiogenic Carcinoma.—Lindskog relates his experience in 100 consecutive cases of primary pulmonary cancers. There were 82 male and 18 female patients. The first symptom was usually cough, pain in the chest or a griplike cold. Sixty-five patients were inoperable when first admitted. Three refused treatment. Surgical exploration was performed on 32. Twenty of the 32 patients were found not suitable for resection. Twelve patients were submitted to surgical resection (10 pneumonectomy, 2 lobectomy), with a hospital mortality of 25 per cent. Three patients are surviving 2.5 to 5.5 years after successful resection. All had squamous cell carcinoma. They are now clinically well. One patient survives and is working 3.5 years after radiation therapy. Radiation therapy increased the average life expectancy from 5.0 months in the untreated group to 8.6 months in the group which was treated by radiation, with or without surgical exploration. This difference of 3.6 months does not have statistical significance.

Subtotal Gastrectomy for Duodenal Ulcer.—Allen and Welch think that from 10 to 15 per cent of cases of duodenal ulcer must be treated surgically. This group includes ulcer patients in varying degrees of chronicity who have developed cicatricial stenosis, those who bleed massively with each exacerbation and those who continue to have pain on the ambulatory medical regimen. The authors thought that the operation should attempt removal of the distal two thirds of the stomach and the ulcer bearing segment of the duodenum. Failures due to technical difficulties with the duodenal stump made it obvious that the risk was too great to pursue this procedure in all cases. Four different modifications which have been more successful are described. A table which classifies the results in 129 cases shows that the results were excellent in 112 cases, satisfactory in 8 and poor in 9 cases.

Late Results in Ulcerative Colitis.—Cave examined 50 of 80 patients who survived operation for ulcerative colitis. Forty were at work. The ileostomy bag has proved not very annoying. Many of the younger patients are able to play golf and baseball, some play tennis and a few even swim in the ocean. There were 3 who showed malignant changes originating in a polypus in some part of the colon. These 3 patients are still alive from three to seven years after colectomy. Another patient developed a carcinoma in the remaining rectal segment, failed to notify her physician of persistent bleeding and returned to the hospital with an inoperable lesion. She died. The fecal stream has been successfully reestablished in 2 patients by ileosigmoidostomy. Prolapse of the ileum through the stoma frequently has been a serious complication. To prevent irritation of the skin about the ileal stoma, compound tincture of benzoin, followed by generous applications of fullers' earth or a dusting powder, is generally effective. Acute ileus due to adhesions or a volvulus is not an infrequent occurrence. Sudden collapse from salt deprivation is treated with large amounts of salt orally and intravenously. There is no standard diet for all patients with ileostomy, but fruit juices and leafy vegetables should be avoided.

Archives of Internal Medicine, Chicago

78:369-496 (Oct.) 1946

*Hemolytic Streptococcic and Nonstreptococcic Diseases of Respiratory Tract: Comparative Clinical Study. L. A. Rantz, P. J. Boisvert and W. W. Spink.—p. 369.
Megakaryocytic Reaction Localized in Bone Marrow: Report of New Hematologic Syndrome with Observations on Origin and Development of Megakaryocytes and Derivation of Platelets. V. De La Fuente.—p. 387.
Objective and Clinical Study of Tongue: Comparison of Normal, Desquamated and Atrophic Tongues by Tongue Print Method. J. R. DiPalma.—p. 405.
Retinal and Choroidal Arterioles in Malignant Hypertension: Clinical and Pathologic Study of 15 Cases. F. R. Manlove.—p. 419.
Cardiac Muscle: Further Studies; Investigation of Chemical Changes in Myocardial Insufficiency, with Special Reference to Adenosinetriphosphate. G. H. Mangun and V. C. Myers.—p. 441.
Infectious Diseases: Twelfth Annual Review of Significant Publications. H. A. Reimann.—p. 447.

Streptococcic and Nonstreptococcic Diseases of the Respiratory Tract.—According to Rantz and his associates hemolytic streptococcic infection of the respiratory tract is usually of acute onset and associated with chills, headache, generalized aching and prostration. The prevailing symptom is sore throat, with tonsillar and pharyngeal exudate and redness and edema of the pharyngeal tissues. Tender anterior cervical glands are nearly always observed. Nonstreptococcic disease of the respiratory tract is typically a disorder associated with cough and hoarseness. Nasopharyngeal tissues are nearly normal. Exudate, edema and redness are minimal or absent. Tender anterior cervical glands are rarely observed. The authors think that a differentiation between streptococcic and nonstreptococcic diseases of the respiratory tract in adults may be made in the northern United States with an accuracy of approximately 70 per cent without bacteriologic study of the throat flora and in from 80 to 90 per cent if this laboratory procedure is included. The situation is probably different in the Southern states, where streptococcic disease occurs infrequently and where the atypical varieties of nonstreptococcic disease would be observed more often and differential diagnosis would be more difficult.

Archives of Neurology and Psychiatry, Chicago

56:365-488 (Oct.) 1946

Electrical Skin Resistance Test in Evaluation of Peripheral Nerve Injuries. E. Herz, G. H. Glaser, J. Moldover and T. I. Hoen. —p. 365.
Primary Behavior Disorders and Psychopathic Personality: I. Correlations of Electroencephalogram with Family History and Antecedent Illness or Injury. J. S. Gottlieb, M. C. Ashby and J. R. Knott. —p. 381.
Cleidocranial Dysostosis with Psychosis. S. Kilgore and G. W. Lasker. —p. 401.
Electrical Paresthesias in Extremities Following Injury to Central Nervous System. S. C. Little.—p. 417.
Histologic Study of Brain in Experimentally Induced Acidosis. W. F. Windle, H. Koenig and A. V. Jensen.—p. 428.
*Meningoencephalitis Complicating Herpes Zoster Ophthalmicus After Treatment by Vaccination. M. J. Madonick.—p. 434.
*Surgical Treatment of Syringobulbia and Syringopontia: Report of 2 Cases. F. J. Cramer.—p. 442.

Meningoencephalitis Following Vaccination for Herpes Zoster Ophthalmicus.—Madonick reports the occurrence of meningoencephalitis in a man aged 60 following vaccination for treatment of herpes zoster ophthalmicus. The nervous complications appeared eight days after the patient had been vaccinated. It would seem that the herpes virus was activated into a full blown meningoencephalitis by the vaccinia virus.

Surgical Treatment of Syringobulbia and Syringopontia.—Cramer reports 2 cases in which he operated on the brain stem successfully for the relief of syringobulbia and syringopontia. Syringomyelia, syringobulbia and syringopontia are topographically different expressions of the same basic pathologic process. They are due to anomalous congenital dysplasia of ectopic gliogenous cell rests within the neuraxis, and the symptoms are caused by the sequelae of the developmental maturative and degenerative processes which these undergo. In both cases the condition simulated neoplasm clinically in the progression of symptoms. In both cases the syndrome of advancing intracranial pressure was relieved. The author concludes that syringoid myelodysplasias of the brain stem are amenable to surgical intervention. Operation should be undertaken when the course is relentlessly progressive and there is advancing intracranial compression.

Archives of Otolaryngology, Chicago

44:377-516 (Oct.) 1946

Osteomyelitis of Lower Jaw and Rational Use of Chemotherapeutic Agents. C. D. Blassingame.—p. 377.
*Ménière's Syndrome: The Basic Fault? M. Atkinson.—p. 385.
War Injuries to Mastoid and Facial Nerve. D. Myers.—p. 392.
Abnormal Course of Facial Nerve in Fallopian Canal. K. Kettel.—p. 406.
*Penicillin in Oral Therapy of Vincent's Angina and Acute Follicular Tonsillitis. E. S. Hopp.—p. 409.
Rhinitis and Eustachian Salpingitis. M. D. Campbell.—p. 414.
Neuralgic Syndromes of Head: Anatomy and Physiology of Sensory Nerves to Head. R. Jaeger.—p. 424.
Fractures of Malar-Zygomatic Compound: Treatment by Improved Methods and Myoplasty. M. B. Stewart and J. J. Conley.—p. 443.
Free Voice and Pure Tone Audiometer for Routine Testing of Auditory Acuity: Studies on Comparative Efficiency. J. D. Harris.—p. 452.
Local Use of Penicillin and Sulfathiazole for Acute and Chronic Sinusitis. A. R. Everett.—p. 468.
Effect of Sulfonamide Drugs on Mucous Membranes: Experimental Study of Action of Newer Sulfonamide Drugs on Mucous Membranes of Rabbits. J. C. Dickson.—p. 474.
Functional Examination of Hearing. A. Lewy and S. L. Shapiro. —p. 483.

Ménière's Syndrome.—Atkinson brings together the evidence which supports the view that dysfunction of the capillaries is the basic fault which produces the disturbance of the labyrinthine function. Increased permeability of the capillaries explains the histologic picture. The treatments by reduction of water intake and sodium intake or by increase of potassium intake owe their beneficial effect to diminishing the amount of fluid available to seep through the abnormally permeable capillary walls. Treatment with histamine or nicotinic acid is more fundamental, since it seeks to overcome the factor which is damaging the capillary wall. The one tries to limit the leak from the reservoir by diminishing the head of water; the other attempts to repair the walls. The author thinks that Ménière's disease is not a disease per se but a syndrome. It is the syndrome of the labyrinth in paroxysmal form and can be produced by any factor which, by increasing the permeability of the capillaries forming the stria vascularis, increases the production of endolymph, thus raising intralabyrinthine pressure. Satisfactory treatment depends on determining what that factor is and eliminating it.

Penicillin in Vincent's Angina and Follicular Tonsillitis.—Hopp treated 25 patients who had Vincent's angina with penicillin sodium in gelatin capsules, 10,000 units each, one being given every two hours for ten doses. Cure was obtained in twenty-four hours. Thirty-seven patients were treated similarly for acute follicular tonsillitis, with the body temperature falling to normal in twenty-four hours and great symptomatic relief; cure was obtained in three to five days. The author considers this a preliminary report and says that further study is required to determine (*a*) the least number of doses of penicillin necessary for cure and (*b*) the smallest dose that will yield results as good as those obtained with the doses mentioned.

Archives of Pathology, Chicago

42:359-458 (Oct.) 1946

*Necropsies on Okinawans: Anatomic and Pathologic Observations. P. E. Steiner.—p. 359.
Bilateral Ovarian Aplasia. C. A. Erskine and I. Rannie.—p. 381.
Eclampsia: Report of Case in Which There Was Extensive Destruction of Brain. H. Josephy and E. F. Hirsch.—p. 391.
Temporal Arteritis: Report of Case and Comparison with Respect to Periarteritis Nodosa. L. Z. Gordon and D. C. Thurber..—p. 402.
Lesions of Reticuloendothelial Cells in Anaphylactic Shock. P. Bueno. —p. 412.
Carotid-Cavernous Fistula. O. Eitzen.—p. 419.
Truncus Arteriosus Communis Persistens. A. C. Webb.—p. 427.
*Atherosclerosis and Arteriosclerosis in Dogs Following Ingestion of Cholesterol and Thiouracil. A. Steiner and F. E. Kendall.—p. 433.
Further Evidence for Successive Stages in Formation of Neoplasms. H. P. Rusch and B. E. Kline.—p. 445.

Necropsies on Okinawans.—The necropsies reported by Steiner were done on 150 Okinawans. There were 51 males and 99 females, and the ages of the subjects varied between 18 days and 95 years. Death was due to combat injuries in 100 cases, to noncombat (chiefly medical) causes in 36 and to a combination of war injuries and medical conditions in 14. Apart from the combat injuries these necropsies reveal differences from what would be expected in a similar series in the United States. The most striking finding was the low incidence of retrogressive and degenerative changes. Senility came late, and cardiac and skeletal muscles remained well preserved even in the aged. Arteriosclerosis also developed late or not at all, and its lethal sequels in the brain, the kidneys and the heart were never seen. Hypertensive cardiovascular-renal disease was not seen except in 1 case of the type associated with toxemia of pregnancy. Although cirrhosis of the liver was common, disease of the biliary tracts, including cholelithiasis, was not. The low incidence of malignant neoplasms also was of interest. There was a suggestion of excellent endocrine balance in the absence or the low incidence of hirsutism in women, pathologic obesity, thyroid disease, diabetes, cystic diseases of the mammary gland, fibroids and endometrial disease of the uterus, and nodular hyperplasia of the prostate and the adrenal glands. There was no disease of the stomach except ulcers; these were acute and may have been related to the psychosomatic stress incidental to the bombing and invasion. There were no scars of healed peptic ulcers. The most important medical problems apart from the combat injuries were the infectious diseases. Tuberculosis, dysentery, pneumonia and tetanus took heavy tolls. Filariasis appeared to be common but was of a benign form. The incidence of intestinal helminthic infections was high, but here again the clinical effects were negligible.

Atherosclerosis in Dogs.—Arterial lesions similar in distribution and morphologic character to those seen in human atherosclerosis and arteriosclerosis were found in dogs following prolonged hypercholesteremia. The high serum cholesterol levels were produced by feeding 10 Gm. of cholesterol in 40 cc. of cottonseed oil daily to dogs whose thyroid function was modified by administration of thiouracil. Although arteriosclerosis of man is too protean a disease to have a single cause, Steiner and

Kendall think that the results reported here justify the belief that at least in the cases in which arteriosclerosis follows hypercholesteremia the disease is similar to that produced experimentally in animals.

Archives of Surgery, Chicago

53:359-488 (Oct.) 1946

Tests for Collateral Circulation in Extremities. H. B. Shumacker Jr. and K. L. Carter.—p. 359.
*Effect of Penicillin in Experimental Intestinal Obstruction: Cure of Strangulated Ileal Obstructions Treated with Penicillin Prior to Late Resection. A. Blain, J. D. Kennedy, R. J. Calihan and H. N. Harkins.—p. 378.
Air Force Battle Casualties: Experience with Acute Injuries of 839 Battle Casualties from Eighth Air Force. C. E. Gardner.—p. 387.
Orbicularis Oris Muscle in Double Harelip. F. C. Lee.—p. 407.
Fatalities Following War Wounds of Abdomen. B. Bradford Jr. and D. A. Campbell.—p. 414.
Production of Experimental Portal Hypertension in Dog: Anatomy of Hepatic Veins in Dog. D. Kershner, T. C. Hooton and E. M. Shearer.—p. 425.
Carcinoma of Pancreas Still Local at Autopsy Four Years After Palliative Operation. H. C. Saltzstein and J. Rao.—p. 435.
Para-Articular Ossification of Soft Parts of Ankle: Complication of Sprain With or Without Fracture of Shaft of Ipsilateral Fibula. C. J. Sutro.—p. 441.
Injuries of Thoracic Duct: Report of Case of Chylothorax in Which Patient Recovered After Ligation of Thoracic Duct. R. H. Loe. —p. 448.
Arteriosclerosis Obliterans of Abdominal Aorta. W. D. Holden.—p. 456.
*Acute Fulminating Ulcerative Colitis with Massive Perforation and Peritonitis: Report of Case. T. C. Chisholm.—p. 462.
Primary Peritonitis Caused by Friedländer's Bacillus: Report of Case with Recovery Following Sulfadiazine Therapy. R. K. McDonald and G. H. Klingon.—p. 477.
Blood Level of Phenol in Uremia. R. M. Nesbit, L. B. Bureck and N. S. Olsen.—p. 483.

Penicillin in Intestinal Obstruction.—Blain and his associates present an account of 5 dogs in which resection of a strangulated ileac obstruction was performed at a period twice as long after the production of the strangulation as any control dog not treated with penicillin lived. Four of these resections were completely successful, and the dogs were cured. Blain recommends therapy with massive doses of penicillin in all cases of acute intestinal obstruction in which strangulation is believed to be present or in which strangulation cannot be ruled out. This should be an adjunct to and not a substitute for early operation on such obstructions.

Acute Fulminating Ulcerative Colitis with Peritonitis.—A woman aged 43, hospitalized in profound shock, had had diarrhea for four weeks. Daily treatments included repeated attempts to pass a Miller-Abbott tube to relieve distention and the administration of plasma, blood and solutions containing salt and sugar. Sodium sulfadiazine was given parenterally. Improvement continued for three days, with a slight drop in the pulse rate, stabilization of the blood pressure, clearing of the mental state and decrease in discomfort. On the fourth hospital day the patient began to pass large amounts of bright red blood by rectum. She developed profound peripheral collapse, which was not remedied by repeated transfusions; she died on the fifth day. Necropsy revealed acute ulcerative colitis with extensive necrosis resulting in the disappearance of the ventral (antimesenteric) half of the entire colon from the ileocecal valve to the sigmoid. The remaining wall of the large bowel appeared as an open trough with severe cellulitis and erosion into the submucosa and muscularis. Anal excoriations and a rectovaginal fistula were noted. A table summarizes the salient features of 5 acute cases together with those of the present one. Chisholm emphasizes that this condition probably differs etiologically from the "fulminating" form of thromboulcerative colitis described by Bargen. He regards well timed surgical intervention in conjunction with general supportive therapy as the best treatment.

Bulletin of Johns Hopkins Hospital, Baltimore

79:207-260 (Sept.) 1946

Necrosis and Ulceration of Intestinal Wall in Simple Intestinal Obstruction: Experimental Study. W. H. Harper and R. A. Lemmer.—p. 207.
Renal Clearance of Thiosulfate in Man. E. V. Newman, A. Gilman and F. S. Philips.—p. 229.
Differences in Action of Crystalline and Noncrystalline Preparations of Esteriol. J. Schiller.—p. 243.

California Medicine, San Francisco

65:93-148 (Sept.) 1946

Anesthesia for Emergency Surgical Procedures. C. F. McCuskey.—p. 93.
Treatment of Bladder Tumors. R. W. Barnes, C. L. Turner and R. T. Bergman.—p. 95.
Onset of Ovulation During the Puerperium. R. A. Lyon and Mary Jane Stamm.—p. 99.
Use of Penicillin in Nongonococcal Infections of Urogenital Tract. H. M. Weyrauch.—p. 104.
Trend of Medicine and Its Relationship to Prevention of Disease. S. P. Lucia.—p. 108.
Clotting Mechanism and Tests for Its Efficiency. R. W. Hammack. —p. 109.
Delayed Reactions Following Penicillin Therapy. A. T. Hinman, G. P. Warner and J. G. Li.—p. 112.

65:149-200 (Oct.) 1946

Human Reactions to Experimentally Induced Impact Forces. H. R. Bierman.—p. 149.
Dermatologic Aspects of Dermatitis Due to Atabrine. R. O. Pfaff. —p. 153.
*Atabrine Dermatitis and Associated Aplastic Anemia. J. R. Drake and H. D. Moon.—p. 154.
Untoward Effects of Atabrine. A. G. Bower.—p. 157.
Observations on Function of Clavicle. V. T. Inman and J. B. DeC. M. Saunders.—p. 158.
Two Team Abdominoperineal Resection. M. R. Hill and R. L. Belt. —p. 167.
Responsibility of Pediatrician in Orthodontic Problem. F. M. Pottenger Jr.—p. 169.
Medical Progress: Present Concepts of Clinical Significance of Unipolar Precordial Electrocardiograms. M. Sokolow.—p. 171.

Quinacrine Dermatitis and Aplastic Anemia.—Commenting on the large number of soldiers who developed skin eruptions during treatment with quinacrine, Drake and Moon show that the cutaneous reactions to quinacrine may be divided into three groups: (1) the lichenoid, which is the type primarily to be considered in this report, (2) the eczematoid and (3) the generalized exudative and exfoliative type. Treatment should consist in cessation of administration of quinacrine, general supportive care and dermatologic care along accepted lines. X-ray therapy was of no benefit, and heavy metals and arsenic cannot be recommended. Aplastic anemia was the most common cause of the death of patients with skin lesions due to quinacrine. Aplastic anemia was present in 9 cases of quinacrine dermatitis coming to necropsy.

Canadian Medical Association Journal, Montreal

55:425-542 (Nov.) 1946

Ascorbic Acid Metabolism After Trauma in Man. W. A. Andreae and J. S. L. Browne.—p. 425.
*Bilateral Frontal Lobe Leukotomy in Treatment of Mental Disease. K. G. McKenzie and L. D. Proctor.—p. 433.
Cancer of Prostate: Eleven Year Survey at Toronto General Hospital. R. Pearse and E. G. Meyer.—p. 441.
Absorption of Enteric Coated Ammonium Chloride. Frances L. Selye. —p. 445.
Observations on Sprue Syndrome. S. J. Shane and V. F. Deyke.—p. 448.
Intra-Abdominal Pressures. R. Lecours.—p. 450.
Further Studies on Ultraviolet Radiation in Surgery. R. Fraser. —p. 457.
Prognosis in Cancer. N. A. McCormick.—p. 460.
Role of Emotions in Production of Gastrointestinal Disturbances. J. P. S. Cathcart.—p. 465.
Effect of Benzedrine on Mental or Physical Fatigue in Soldiers. W. Somerville.—p. 470.
Clinical Observations on Use of Benadryl, a New Antihistamine Compound. H. F. MacInnis.—p. 476.
Vein Ligation in Prevention of Pulmonary Embolus. G. C. Hohnston and H. R. Robertson.—p. 479.
Management of Emergencies in Diabetes Mellitus. W. W. Simpson. —p. 484.
Surgeon-Anesthetist Relationship. P. H. T. Thorlakson.—p. 489.
Immunization in Children. J. H. B. Grant.—p. 493.

Bilateral Frontal Lobe Leukotomy in Mental Disease.—McKenzie and Proctor, after briefly reviewing the history and physiologic basis for frontal lobe leukotomy, discuss the operative technic and the selection of patients. They performed the operation on 27 patients in whom all other recognized psychiatric therapies were employed to no avail. A common clinical finding was that of fear, agitation or impulsive behavior. Approximately 85 per cent of the cases have shown improvement ranging from improved nursing problems to complete recoveries. Thirteen of 27 patients who were previously considered to be hopelessly mentally ill have been returned to community life. The only complication observed is that of a mild hypersexuality in 25 per cent of the cases.

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Cincinnati Journal of Medicine

27:675-774 (Oct.) 1946

Clinical Uses of Products of Human Plasma Fractionation. C. A. Janeway.—p. 675.
Respiratory Tract Cancer Deaths in Relation to Atmospheric Pollution in Cincinnati. C. A. Mills.—p. 692.
Blood Levels and Urinary Excretion of Penicillin After Oral Administration. F. W. Oberst, M. J. Foter and F. A. Nielsen.—p. 696.
Folic Acid: Lactobacillus Casei Factor, Liver Vitamin Bc. C. F. Vilter.—p. 706.

27:775-856 (Nov.) 1946

Nature and Treatment of Peptic Ulcer. W. L. Palmer.—p. 775.
*Allergy Associated with Asthma, Dermatitis, Cataract and Optic Atrophy Treated with Urinary Proteose: Report of Case. E. E. Rhoads.—p. 792.
Surgical Treatment of Gallbladder Disease. M. M. Zinninger.—p. 799.

Urinary Proteose in Treatment of Allergy.—Rhoads reviews the history of a woman aged 24 in whom asthma and severe dermatitis were associated with cataract and optic atrophy. Treatment which consisted in the administration of autogenous urinary proteose resulted in an apparent cure of the dermatitis and prevention of further ocular change. Diminution of the amount of proteose precipitated was proportional to the response of the patient.

Connecticut State Medical Journal, Hartford

10:817-892 (Oct.) 1946

Health Needs of People. J. H. Howard.—p. 817.
Connecticut's Rank Among States with Respect to Various Health Factors. J. H. Watkins.—p. 823.
Probable Echinococcus Disease of Heart: Review of Literature, with Case Report. C. C. Verstandig.—p. 830.
Health Legislation Beneficial to People. P. K. Gilman.—p. 833.
On Community Cooperation for Health. G. M. Wheatley.—p. 837.
Malpractice Actions: Who Starts Them? L. J. Regan.—p. 842.

10:893-970 (Nov.) 1946

*Cardiovascular Catheterization as Aid in Diagnosis of Abnormal Cardiovascular Communications. A. J. Geiger, H. C. Anderson, A. W. Winkler and H. S. Kaplan.—p. 895.
Psychiatric Reactions to Aerial Combat and Their Sequelae. W. A. Console.—p. 900.
Present Status of Electric Shock Therapy. S. Drobnes.—p. 903.
Psychogenic Deafness. E. H. Truex Jr.—p. 907.
Problems of Prepayment for Medical Service. D. A. Clark.—p. 915.
Problems Related to Medical Care of Veterans. J. C. Harding.—p. 921.

Cardiovascular Catheterization.—Geiger and his associates discuss the technic of cardiovascular catheterization and its value in the study of cardiovascular abnormalities as illustrated by a few cases. The procedure appears to be entirely innocuous.

Endocrinology, Springfield, Ill.

39:161-224 (Sept.) 1946

Application of Principles of Statistical Analysis to Biologic Assay of Hormones. L. I. Pugsley.—p. 161.
Estrogen in Late Pregnancy Mare Serum and Ovarian Inhibition. H. H. Cole.—p. 177.
Nature of Circulating Estrogen: Lipoprotein-Bound Estrogen in Human Plasma. S. Roberts and Clara M. Szego.—p. 183.
Fluctuations in Weight, Hematocrit and Plasma Protein with Menstrual Cycle. D. N. Danforth, P. K. Boyer and S. Graff.—p. 188.
Effect of Steroids Related to Cortical Hormones and of Stilbestrol on Adrenalectomized Guinea Pig. S. Bruzzone, H. Borel and J. Schwarz.—p. 194.
Adrenal Function in Pregnancy. Eleanor H. Venning.—p. 203.

Experimental Medicine and Surgery, Brooklyn

4:193-288 (Aug.) 1946

Chest Lead Diagram of Normal Heart: Preliminary Report. B. Kisch and B. Richman.—p. 193.
Ethylenediamine Dihydrochloride or "Cilor-Ethamine": I. As Urinary Acidifier. E. M. Boyd and J. A. S. Dorrance.—p. 212.
Id.: II. Untoward and Toxic Reactions. E. M. Boyd and Kathleen G. W. Seymour.—p. 223.
Id.: III. As Diuretic. E. M. Boyd and M. Shirley Lapp.—p. 228.
Cannon Sound and Other Intensified Single Heart Sounds. F. M. Groedel and M. Miller.—p. 231.
Intratracheal Pneumocardiogram in Man: Observations on Patients with Tracheal Cannulae. F. M. Groedel and M. Miller.—p. 248.
Carbohydrate Content of Serum Proteins in Normal and Toxemic Pregnancy. B. Lustig and J. Novak.—p. 255.
Coagulation Defect in Shocks Produced by Trypsin, Peptone and Ascaris Extracts. M. Rocha e Silva, Sylvia O. Andrade and Rachel M. Teixeira.—p. 260.
Influence of Wheat Germ Oil on Production of Tumors in Rats by Methylcholanthrene. W. G. Jaffe.—p. 278.

Hawaii Medical Journal, Honolulu

6:3-66 (Sept.-Oct.) 1946

General Principles of Pharmacology. C. D. Leake.—p. 13.
*Aversion Treatment of Alcoholism. W. M. Shanahan and E. J. Hornick.—p. 19.
Analysis of Queen's Hospital Diabetic Clinic: Physician's Data. M. E. Berk, Lillian Elsholtz Page and Virginia C. Ott Herbst.—p. 22.
Erythroblastosis Fetalis and Icterus Precox: Four Case Reports. F. D. Nance.—p. 26.

Aversion Treatment of Alcoholism.—The conditioned reflex treatment depends on an aversion or distaste for alcoholic beverages by virtue of their association during treatment with drugs—emetine, pilocarpine and ephedrine—which make the patient sick. The repeated association of the two stimuli alcohol and drugs under appropriate circumstances will result finally in the ability of the conditioned stimulus (liquor) to produce the symptom complex formerly brought about by the unconditional stimulus (drugs). The conditioned reflex treatment of selected patients produces results in from 40 to 80 per cent of them. Shanahan and Hornick report that of 24 patients thus treated 70 per cent are abstinent, 17 per cent are improved and 13 per cent are unimproved. The conditioned reflex treatment is not a general panacea for alcoholism, since the great majority of those afflicted fail to recognize the true nature of their disorder and decline definite therapy.

Indiana State Medical Assn. Journal, Indianapolis

39:477-584 (Oct.) 1946

Chronic Brucellosis as Public Health Problem. T. B. Rice.—p. 477.
*Chronic Brucellosis: Preliminary Report. M. J. Moss.—p. 481.
Symptomatology and Diagnosis of Chronic Brucellosis. N. Davis.—p. 485.
Practice of Medicine in Rural Areas. J. E. Ferrell.—p. 488.
General Practitioner in Public Health Program. L. E. Burney.—p. 490.
Treatment of Peptic Ulcer in the Diabetic. O. E. Wilson.—p. 494.
Office Practice of General Practitioner. A. P. Hauss.—p. 495.
Family Physician—Reminiscence. J. B. Maple.—p. 499.

Chronic Brucellosis.—According to Moss the most constant manifestations of chronic brucellosis are chronic fatigue and exhaustion, arthralgia and myalgia, occasional vague gastrointestinal symptoms, mental depression and apprehension, with or without chronic pyrexia, and a complete lack of physical findings. An epidemiologic history of contact is necessary. The acute phase of the disease may never have existed, and serum agglutination titers are more frequently negative than positive. Blood cultures may well be expected to be negative in the chronic phase of the disease. Opsonic-phagocytic indexes are ordinarily unobtainable. The skin test is the most reliable and the most convenient test for the general practitioner. The author uses the skin test for brucellosis in all cases presenting a history of chronic fatigue and exhaustion, arthralgia and myalgia, associated with an absence of physical findings, with or without chronic pyrexia. More than four hundred skin tests have been given. About 19 per cent have been positive, but treatment is instituted only if the symptomatology warrants it. Vaccine therapy has given good to excellent results in 90 per cent of 74 patients with chronic brucellosis.

Iowa State Medical Society Journal, Des Moines

36:419-472 (Oct.) 1946

Problem of Certain Animal Diseases Prevalent in Iowa as Related to Human Medicine. R. E. Shope.—p. 419.
Congenital Cystic Malformation of Lung: Differential Diagnosis and Pathologic Characteristics in 21 Cases. W. E. Adams, F. J. Phillips and J. W. Hanni.—p. 425.
Reflections on Medical Education. D. Slaughter.—p. 434.
*Review of Studies on Immunity to Vivax Malaria. M. F. Boyd.—p. 437.
The Doctor Treats the Patient. Lauren H. Smith.—p. 446.

Immunity to Vivax Malaria.—According to Boyd the outcome of the inoculation of an institutionalized neurosyphilitic patient usually cannot be predicted. This uncertainty is due to the circumstance that the mental deterioration of the patients rarely permits them to give an accurate history of prior experience with this disease. Their response to inoculation with Plasmodium vivax permits of their classification in four categories: (1) inoculation resulting in a take, (*a*) an attack of three weeks or longer, (*b*) a short attack lasting from one day to two weeks, (*c*) without a clinical attack and (2) inoculation not resulting in a take. An interpretation of the significance of these results

is permitted from the homologous or heterologous reinoculation of patients. Since infections of the character of 1 *a* have never been observed subsequent to reinoculation, it is inferred that patients with attacks of three weeks or more in duration were previously completely susceptible. Results like 1 *b* may follow either heterologous or homologous reinoculations and in the latter case indicate that immunity is incomplete. Following homologous reinoculation, results like 1 *c* or 2 may be secured. The latter indicates a very effective immunity or refractory condition. It is readily made evident by reinoculation with demonstrably infectious material that convalescents from vivax malaria have a distinct and at times potent immunity to the homologous parasites.

36:473-508 (Nov.) 1946

War Wounds of Abdomen. H. H. Searls and F. P. Shidler.—p. 473.
*Gelsemium in Preparalytic Stage of Poliomyelitis. H. D. Holman. —p. 477.
Streptococcic Pneumonia. J. E. McFarland.—p. 481.
Primary Atypical Pneumonia. B. F. Wolverton.—p. 485.
Roentgenologic Aspects of Primary Atypical Pneumonia. W. K. Cooper. —p. 487.

Gelsemium in Preparalytic Poliomyelitis.—Holman used gelsemium (yellow jasmine root) for its antispasmodic action in the treatment of 60 patients with acute anterior poliomyelitis. Since less than 7 per cent of those treated had clinical paralysis, it is concluded that the drug is effective if diagnosis can be made early and treatment begun before there is permanent damage to the nervous system. The margin between its therapeutic and toxic concentration is reported to be narrow.

Journal of Bacteriology, Baltimore

52:405-504 (Oct.) 1946. Partial Index

Mounting of Bacteria for Electron Microscope Examination. J. Hillier and R. F. Baker.—p. 411.
Small Colony Variants of Escherichia Coli. Charlotte A. Colwell.—p. 417.
Growth of Brucella in Aerated Liquid Cultures. H. N. Glassman and S. Elberg.—p. 423.
Further Studies on One Anaerogenic Paracolon Organism, Type 29911. C. A. Stuart, K. M. Wheeler and Virginia McGann.—p. 431.
Isolation from Agar of Inhibitor for Neisseria Gonorrheae. H. L. Ley Jr. and J. H. Mueller.—p. 453.
*Urea Decomposition as Means of Differentiating Proteus and Paracolon Cultures from Each Other and from Salmonella and Shigella Types. W. B. Christensen.—p. 461.
Influence of Thiamine on Susceptibility of Chicks to Avian Encephalomyelitis. J. M. Cooperman, H. C. Lichstein, P. F. Clark and C. A. Elvehjem.—p. 467.
Role of Spontaneous Variants in Acquisition of Streptomycin Resistance by Shigellae. M. Klein and L. J. Kimmelman.—p. 471.
Studies on Relationship Between Bacteriophage and Bacterial Host Cell: I. Adsorption of Phage by Resistant Variants of Staphylococcus. J. E. Henry and R. J. Henry.—p. 481.
Filters Suitable for Separating Soil Bacteria from Bacteriophage. H. J. Conn and Isabel Dimmick.—p. 489.

Differentiation of Proteus and Paracolon Cultures.—Christensen describes a urea medium which eliminates the necessity of an organism's utilizing urea ammonia as a sole source of nitrogen and which is therefore capable of demonstrating urease activity in organisms somewhat more fastidious in their nitrogen requirements. The medium shows that, in addition to Proteus, paracolon Aerobacter and paracolon intermediates are definitely urease positive. Paracolon Escherichia as well as Salmonella and Shigella species are urease negative. The medium is recommended as an aid in routine enteric bacteriology.

Journal of Clinical Endocrinology, Springfield, Ill.

6:595-654 (Sept.) 1946

Animal Experiments Relating to Water Diuresis Tests for Adrenal Insufficiency. R. Gaunt.—p. 595.
*Specificity of "Water Test" as Diagnostic Procedure in Addison's Disease. M. S. Levy, M. H. Power and E. J. Kepler.—p. 607.
Changes in Prominence of Eyes in Various Thyroid States. B. M. Dobyns and S. F. Haines.—p. 633.
Nature of Benadryl Activity: Glucose Tolerance Curves. H. Reinstein and T. H. McGavack.—p. 643.

Water Test in Diagnosis of Addison's Disease.—Levy and his associates report the results of the water test at the Mayo Clinic between 1941 and 1945. The first procedure is based on the inability of patients with adrenal cortical insufficiency to excrete orally ingested water at the normal rate. The second procedure employs a formula which takes into account the volume of excreted urine and the clearances of urea and chloride from the blood. The delayed excretion of water, such as usually occurs in Addison's disease, will not by itself establish the diagnosis of the disease. False positive responses to the first procedure may occur in many seemingly unrelated clinical conditions. Such false positive responses usually indicate the presence of organic illness not necessarily Addison's disease. Normal diuresis following ingestion of water (false negative result of test) occurs relatively infrequently in cases of Addison's disease, having been found 9 times in 74 cases. When such a false negative result is encountered it is difficult to establish Addison's disease by any other diagnostic procedure. In the presence of adequate clinical evidence and failure of normal diuresis, the diagnosis of Addison's disease can usually, but not invariably, be established by the second procedure. This one occasionally gives false positive results, but these occur with much less frequency than does delayed diuresis. False negative results occur even more rarely, and when they do it is again difficult to establish the diagnosis of Addison's disease by other laboratory criteria. Administration of sodium chloride, desoxycorticosterone acetate or adrenal cortex extract in amounts commonly employed in the treatment of Addison's disease did not seem in a limited number of cases to rectify the abnormal factors that account for the production of abnormal water tests. Patients having Addison's disease apparently lack the capacity to excrete at normal rates both orally ingested water and water given intravenously as 5 per cent solution of dextrose. From this it is concluded that, even if ingested water should be absorbed at a normal rate, its rate of excretion would be delayed.

Journal of Clinical Investigation, Boston

25:451-664 (July) 1946. Partial Index

*Clinical Uses of 2,3-Dimercaptopropanol (BAL): I. Systemic Treatment of Experimental Arsenic Poisoning (Mapharsen, Lewisite, Phenyl Arsenoxide) with BAL. H. Eagle, H. J. Magnuson and R. Fleischman.—p. 451.
Id.: II. Effect of BAL on Excretion of Arsenic in Normal Subjects and After Minimal Exposure to Arsenical Smoke. J. Wexler, H. Eagle, H. J. Tatum and others.—p. 467.
Id.: III. Studies on Toxicity of BAL on Percutaneous and Parenteral Administration. M. B. Sulzberger, R. L. Baer and A. Kanof.—p. 474.
Id.: IV. Pharmacologic Observations on BAL by Intramuscular Injection in Man. W. Modell, H. Gold and M. Cattell.—p. 480.
Id.: V. Skin Sensitization to BAL. M. B. Sulzberger, R. L. Baer and A. Kanof.—p. 488.
Id.: VI. Treatment of Complications of Arsenotherapy with BAL (British Anti-Lewisite). A. B. Carleton, R. A. Peters, L. A. Stocken and others.—p. 497.
Id.: IX. Treatment of Lewisite Burns of Eye with BAL. W. F. Hughes, Jr.—p. 541.
Id.: X. Treatment of Acute Systemic Mercury Poisoning in Experimental Animals with BAL, Thiosorbitol and BAL Glucoside. A. Gilman, Roberta P. Allen, F. S. Philips and Ellen St. John.—p. 549.
*Id.: XI. Treatment of Acute Mercury Poisoning by BAL. W. T. Longcope and J. A. Leutscher Jr. with assistance of E. Calkins and others.—p. 557.
Kidney Function and Circulatory Collapse: Postsyncopal Oliguria. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 568.
Fate of Intravenously Injected Gelatin in Human Subjects. W. S. Hoffman and D. D. Kozoll.—p. 575.
*Changes in Blood Coagulation Following Coronary Thrombosis Measured by Heparin Retarded Clotting Test (Waugh and Ruddick Test). J. H. Ogura, N. R. Fetter, M. A. Blankenhorn and Helen I. Glueck. —p. 586.
Use of Two Radioactive Isotopes of Iron in Tracer Studies of Erythrocytes. W. C. Peacock, R. D. Evans, J. W. Irvine Jr. and others. —p. 605.

Clinical Uses of 2,3-Dimercaptopropanol (BAL).—Eagle and his associates say that, in the search for compounds capable of acting as decontaminants or antidotes for toxic arsenicals, it was reasoned that simple dithiol compounds might form relatively stable ring compounds with lewisite or other trivalent arsenicals and might consequently compete effectively with the dithiol proteins in the tissues. A large series of dithiol compounds was prepared and tested and 1 in particular, the 2,3-dimercaptopropanol, recommended itself as a local decontaminant in combating the arsenical blister gases. This compound is generally known as "BAL" (British antilewisite).

BAL in Acute Mercury Poisoning.—Longcope and his co-workers present observations made on 23 patients who were admitted to the Johns Hopkins Hospital with a history

of having swallowed from 0.5 to 20 Gm. of mercury bichloride and who were treated with BAL. All except 1, who was treated initially with small amounts of BAL, recovered.

Changes in Blood Coagulation Following Coronary Thrombosis.—Ogura and his associates studied 27 cases of acute coronary thrombosis to find evidence of accelerated blood coagulation. In more than three fourths of the cases an acceleration as measured by the Waugh-Ruddick test occurred usually by the second or third day, lasting to about the seventeenth day. Of 16 controls, 9 being in various stages of heart failure, none showed acceleration to the degree seen in coronary thrombosis. Such complications as new coronary thrombosis or extension of the original thrombus or pulmonary infarction developed in 5 patients when acceleration was present, suggesting that this factor may be contributory. The findings suggest also that the first attack is not initiated by accelerated coagulability of the blood and that after the fourth week the clotting mechanism is indistinguishable from normal.

Journal of Experimental Medicine, New York

84:277-402 (Oct.) 1946

Influence of Anesthesia on Experimental Neurotropic Virus Infections: I. In Vivo Studies with Viruses of Western and Eastern Equine Encephalomyelitis, St. Louis Encephalitis, Poliomyelitis (Lansing) and Rabies. S. E. Sulkin, Christine Zarafonetis and A. Goth.—p. 277.

Experimental Vibrio Infections of Developing Chick Embryos. A. T. Wilson.—p. 293.

Nutrition of Host and Natural Resistance to Infection: II. Dietary Effect as Conditioned by Heterogeneity of Test Pathogen Population. H. A. Schneider.—p. 305.

Immunity in Mumps: IV. Correlation of Presence of Complement Fixing Antibody and Resistance to Mumps in Human Beings. Elizabeth P. Maris, J. F. Enders, J. Stokes Jr. and L. W. Kane.—p. 323.

Id.: V. Correlation of Presence of Dermal Hypersensitivity and Resistance to Mumps. J. F. Enders, L. W. Kane, Elizabeth P. Maris and J. Stokes Jr.—p. 341.

Studies on Mechanism of Recovery in Pneumococcal Pneumonia: II. Effect of Sulfonamide Therapy on Pulmonary Lesion of Experimental Pneumonia. W. B. Wood Jr. and E. N. Irons.—p. 365.

Id.: III. Factors Influencing Phagocytosis of Pneumococci in Lung During Sulfonamide Therapy. W. B. Wood Jr., Charlotte McLeod and E. N. Irons.—p. 377.

Id.: IV. Mechanism of Phagocytosis in Absence of Antibody. W. B. Wood Jr., Mary R. Smith and Barbara Watson.—p. 387.

Journal of Immunology, Baltimore

54:107-212 (Oct.) 1946

Intradermal Spread of Vital Dye in Anaphylaxis and Bacterial Allergy. K. Birkhaug and J. Boe.—p. 107.

Action of Urea and Some of Its Derivatives on Bacteria: I. Bacteriostatic and Bactericidal Effects of Urea and Urethane. L. Weinstein and Alice McDonald.—p. 117.

Id.: II. Antibacterial Activity of Combinations of Urea and Urethane with Sulfonamide and Effect of Carbamates on Para-Aminobenzoic Acid and on Solubility of Sulfonamides. L. Weinstein and Alice McDonald.—p. 131.

Id.: III. Effect of Combining Urea or Urethane with Penicillin on Mixed Cultures of Gram-Positive and Gram-Negative Bacteria. L. Weinstein.—p. 145.

Studies on Antireticular Cytotoxic Serum: I. Introduction and Review of Literature. R. Straus.—p. 151.

Id.: II. Preparation and Titration of Serum and Study of Its Serologic Properties. R. Straus, Mildred Runjavac, R. Zaitlin and others.—p. 155.

Id.: III. Effect of Antireticular Cytotoxic Serum on Healing of Experimentally Produced Fractures in Rabbits. R. Straus, M. Horwitz, D. H. Levinthal and others.—p. 163.

Passive Protection of Central Nervous System of Mice Against Viruses That Pursue Pathway of Olfactory Nerves After Intranasal Instillation. Vesicular Stomatitis and St. Louis Encephalitis. H. B. Slavin, H. W. Hale Jr. and G. P. Berry.—p. 179.

*Missed Cases and Contact Carriers Among Nasal Carriers of Beta Hemolytic Streptococci. H. M. Lemon and M. Hamburger Jr.—p. 189.

Quantitative Studies on Neutralization of Pathogenic Agents in Tissues by Circulating Antibodies: VII. Quantitative Determination of Effect of Substances Modifying Capillary Permeability with Aid of Indirect Test. U. Friedeman, F. B. Traub and D. Langstadt.—p. 197.

Production of Types A, B, C, D, E and F Hemophilus Influenzae Antibody for Diagnostic and Therapeutic Purposes. Hattie E. Alexander, Grace Leidy and Catherine MacPherson.—p. 207.

Nasal Carriers of Beta Hemolytic Streptococci.—One hundred and nine ambulatory nasal carriers of group A hemolytic streptococci in two army camps have been studied from the standpoint of the antistreptolysin response of the blood serum and in most instances of signs and symptoms of respiratory infection. Contact carriers and probable contact carriers among this group were uncommon, comprising less than 5 per cent of the total. Missed cases, probable missed cases and "possible missed cases" accounted for 67.6 per cent of carriers in one camp and 94.3 per cent in the other. In one camp 24.3 per cent were not classifiable by the criteria laid down, though it seems likely that most of these were probably missed cases also.

Journal Industrial Hygiene & Toxicology, Baltimore

28:167-242 (Sept.) 1946

Volatile Hydrides of Toxicologic Importance. S. H. Webster.—p. 167.

Respiratory Air Flow Characteristics and Their Relation to Certain Lung Conditions Occurring in Industry. L. Silverman.—p. 183.

Delayed Chemical Pneumonitis Occurring in Workers Exposed to Beryllium Compounds. Harriet L. Hardy and I. R. Tabershaw.—p. 197.

Radium Dial Painting—Medical Status of Workers. I. R. Tabershaw.—p. 212.

Determination of Free Silica in Industrial Dust. T. M. Durkin.—p. 217.

Tellurium: I. Toxicity of Ingested Elementary Tellurium for Rats and Rat Tissues. R. H. DeMeio.—p. 229.

Lobar Pneumonia in Shipbuilding Industry: Review of 544 Cases over One Year Period. C. M. Grossman.—p. 233.

Determination of Chlorinated Hydrocarbon Vapors in Air. R. W. Schayer and H. H. Ackerman.—p. 237.

Journal of Infectious Diseases, Chicago

79:101-198 (Sept.-Oct.) 1946

Comparative Effect of Penicillin and Sulfonamide Drugs on Immune Response of Rabbits to Pneumococcus Infection and Relation of Immunity to Bacterial Chemotherapy. P. E. Harrison.—p. 101.

Growth of Psittacosis Virus in Roller Tube Tissue Culture: Use in Vaccine. H. R. Morgan and R. W. Wiseman.—p. 131.

*Possible Relationship of Pleuropneumonia-like Organisms to Reiter's Disease, Rheumatoid Arthritis and Ulcerative Colitis. R. Wallerstein, B. Vallee and L. Turner.—p. 134.

Use of Sulfadiazine and Penicillin for Treatment of Experimental Anthrax. F. M. Schabel Jr., H. R. Reames and R. D. Housewright.—p. 141.

Study of Group A Streptococci from Healthy Carriers, with Particular Attention to Mucoid Polysaccharide Production. R. M. Pike.—p. 148.

Effect of Quinine on Influenza Virus Infections in Mice. A. O. Seeler, O. Graessle and W. H. Ott.—p. 156.

Studies on Immunity to Asiatic Cholera: I. Introduction. W. Burrows, Adaline N. Mather, Marian E. Elliott and Sylvia M. Wagner.—p. 159.

Id.: II. O and H Antigenic Structure of Cholera and Related Vibrios. W. Burrows, Adaline N. Mather, Virginia G. McGann and Sylvia M. Wagner.—p. 168.

Pleuropneumonia-like Organisms.—Wallerstein and his associates carried out a series of agglutinations on the serums of 102 patients for titers against one strain of pleuropneumonia-like organisms. Four significant titers were observed in patients each of whom had various combinations of colitis, arthritis, conjunctivitis, urethritis or cervicitis and skin lesions. Two of these 4 had the characteristic triad of arthritis, conjunctivitis and urethritis that justified a tentative diagnosis of Reiter's syndrome. No positive titers were obtained in patients with uncomplicated arthritis or colitis. The possible relationship of pleuropneumonia-like organisms to rheumatoid arthritis, chronic ulcerative colitis and Reiter's syndrome is discussed.

Journal of Investigative Dermatology, Baltimore

7:209-268 (Oct.) 1946

*Hypersensitivity to Sunlight and Dysmenorrhea Controlled with Benadryl: Report of Case. W. G. Tyson.—p. 209.

Studies of Skin Lesions Under Filtered Ultraviolet Radiation After Intravenous Injection of Fluorescein: Preliminary Report. F. Herrmann and N. B. Kanof.—p. 210.

Acidity of Surface of Scalp and Other Areas of Skin in Children. F. Herrmann, H. Behrendt and Florentine L. Karp.—p. 215.

Methods for Rapid Evaluation of Beneficial and Harmful Effects of Agents Applied to Human Skin. M. B. Sulzberger, R. L. Baer, A. Kanof and Clare Lowenberg.—p. 227.

Fungistatic Agents for Treatment of Dermatophytosis. J. G. Hopkins, J. K. Fisher, A. B. Hillegas and others.—p. 239.

Benadryl for Hypersensitivity to Sunlight and Dysmenorrhea.—A Negro woman aged 32 had begun to develop severe urticarial wheals five years before when exposed to even small amounts of sunlight. The urticaria was intensified during menstruation. After various treatments had proved ineffective, benadryl in daily oral doses of 100 to 200 mg. controlled not only the urticarial sensitivity to light but also the severe dysmenorrhea.

Journal of Pharmacol. & Exper. Therap., Baltimore

88:1-108 (Sept.) 1946. **Partial Index**

Response of Hypodynamic Myocardium to Known Concentrations of Cardiac Glycosides. W. F. White and W. T. Salter.—p. 1.
Comparison of Pressor Action of Aliphatic Amines. E. E. Swanson and K. K. Chen.—p. 10.
Digitalis III: Relationship Between Potency and Baljet Reaction of Glycosides of Digitalis. F. K. Bell and J. C. Krantz.—p. 14.
Treatment of Di-Isopropyl Fluorophosphate (DFP) Poisoning in Rabbits. B. P. McNamara, G. B. Koelle and A. Gilman.—p. 27.
Synergisms and Antagonisms Between Physostigmine and Di-Isopropyl Fluorophosphate in Cats. R. Koster.—p. 39.
Pharmacologic and Chemotherapeutic Properties of 3,4-Dimethyl-5-Sulfanilamido-Isoxazole. R. J. Schnitzer, R. H. K. Foster, N. Ercoli, and others.—p. 47.
Direct Action of Prostigmine on Skeletal Muscle: Its Relationship to Choline Esters. W. F. Riker Jr. and W. C. Wescoe.—p. 58.
Biochemorphology of Nicotine: I. Observations on Effect of Progressive Degradation of Pyrrolidine Ring. P. S. Larson, J. J. Schwartz, J. K. Finnegan and H. B. Haag.—p. 82.
Metabolic Fate of Acetanilid and Other Aniline Derivatives: I. Major Metabolites of Acetanilid Appearing in Urine. L. A. Greenberg and D. Lester.—p. 87.
Arsine Poisoning, Mode of Action and Treatment. C. J. Kensler, J. C. Abels and C. P. Rhoads.—p. 99.

Journal of Thoracic Surgery, St. Louis

15:297-372 (Oct.) 1946

Direct Approach to Cardiovascular Diseases. C. S. Beck.—p. 297.
*Surgically Removed Foreign Body Embolus in Pulmonary Artery. S. Welin, C. A. Hamberger and C. Crafoord.—p. 302.
Peptic Ulcer of Esophagus. P. R. Allison.—p. 308.
*Intrathoracic Gastric Cyst. J. A. Dickson, O. T. Clagett and J. R. McDonald.—p. 318.
Crushing Injuries of Chest. R. Robertson.—p. 324.
Acute Suppurative Mediastinitis. R. Adams.—p. 336.
Open Pneumonolysis: Adjunct to Pneumothorax and Closed Pneumonolysis. O. C. Brantigan.—p. 341.
Initial Surgery of Thoracoabdominal War Injuries. R. H. Betts.—p. 349.
Arterial Injuries of Thorax. H. D. Adams.—p. 365.

Surgically Removed Foreign Body Embolus.—Welin and his associates report the surgical removal of a foreign body from the left lung of a man aged 21. While working in the forest a splinter from an iron wedge struck him and entered the left groin. He was operated on for a lesion of the femoral vein and later for arteriovenous aneurysm. Since then he has had pain and swelling of the left leg. One year after the accident the patient caught cold and had a cough followed by an acute attack of ague and a stitch in the left side of the back. The diagnosis of foreign body embolism in the pulmonary artery was made by combining ordinary x-ray examination with bronchoscopy. The patient emphasized that there was nothing to indicate inhalation; he had not received any direct injury on the penetration of the splinter, so that the only possible way in which the foreign body could have entered was through the femoral vein of the groin and by the blood stream into the pulmonary artery. The foreign body was extracted by thoracotomy plus arteriotomy followed by vascular suture.

Intrathoracic Gastric Cyst.—Dickson and his co-workers report the surgical removal of a congenital gastric cyst from the mediastinum of a girl aged 10. The patient gave a long history of repeated "pneumonic" attacks. X-ray examination revealed a massive atelectasis of the lower lobe of the left lung and a portion of the upper lobe. There was a shift of the heart and mediastinum to the left side. On bronchoscopy a large amount of purulent secretion was aspirated from the left side. Surgical intervention revealed a large cystic mass with partial extension below the diaphragm.

Michigan State Medical Society Journal, Lansing

45:1135-1286 (Sept.) 1946

Case Reports of Dissecting Aneurysm. P. G. Henley and L. J. Gariepy.—p. 1203.
Treatment of Subacute Bacterial Endocarditis with Penicillin—with Emphasis on Present Day Conclusions: Case Report of Disease Successfully Arrested by Massive Doses of Penicillin. H. L. Smith and E. W. Ebinger.—p. 1213.
Protecting People of Michigan from Tuberculosis. G. A. Sherman.—p. 1220.
Hansen's Disease: New Name for an Old Condition. H. A. Lichtwardt.—p. 1221.

Minnesota Medicine, St. Paul

29:849-960 (Sept.) 1946

Coronary Heart Disease—The Occupational Disease of Doctors. N. C. Gilbert.—p. 881.
Coronary Heart Disease: Prognosis and Life Adaptation. A. R. Barnes.—p. 886.
Treatment of Coronary Emergency. R. V. Sherman.—p. 890.
Outlook for Postwar Medicine as Seen by Radiologist. B. R. Kirklin.—p. 893.
Surgical Treatment of Bronchiectasis. T. J. Kinsella.—p. 898.
Value of X-Ray Examination in Diagnosis of Ruptured Intervertebral Disk. H. O. Peterson.—p. 904.

29:961-1072 (Oct.) 1946

Centenary of Demonstration of Ether Anesthesia. O. W. Parker.—p. 993.
Brief Survey of Prostatic Surgery. C. D. Creevy.—p. 995.
Double and Accessory Urethra. G. W. Irmisch and E. N. Cook.—p. 999.
Some Experiences in Treatment of Chronic Suppurative Otitis Media. E. P. McElmeel.—p. 1003.
Intraocular Malignant Melanomas of Choroid: Report of 3 Cases. W. J. Bushard.—p. 1005.
*Intrapleural Penicillin Therapy in Tuberculosis and Mixed Infection Empyema. F. F. Callahan and A. G. Sanderson.—p. 1008.
Development of Program of Health Service in Industry. H. R. Hennessy.—p. 1012.

Penicillin in Tuberculosis and Mixed Infection Empyema.—According to Callahan and Sanderson, all tuberculous persons in whom empyema develops should be studied for infections with secondary pyogenic organisms as well as for tubercle bacilli. When secondary pyogenic organisms are found the patient should have the benefit of intrapleural penicillin therapy. Whether it should be combined with intramuscular penicillin treatment should depend on the individual case. It is a mistake to expect benefit from penicillin therapy in cases of uncomplicated tuberculous empyema.

New Jersey Medical Society Journal, Trenton

43:357-400 (Sept.) 1946

Cancer Program in New Jersey: Part I. Diagnostic and Therapeutic Cancer Clinics. Prepared by the Advisory Committee on Cancer Control of the Medical Society of New Jersey.—p. 360.
Diabetes in Children. S. Weiss.—p. 365.
Newer Knowledge of Malaria. J. B. Rice.—p. 368.
Occlusion Dressing in Treatment of Dermatoses. O. J. Sokoloff.—p. 373.
Premature Labor. R. A. MacKenzie.—p. 376.
Protein Hydrolysate Ointment: Preliminary Report. P. C. Wiesenfeld.—p. 383.

43:401-446 (Oct.) 1946

Progress in Reorganization of Medical Services in Veterans Administration. P. R. Hawley.—p. 405.
Use of Oxygen by General Practitioner. R. E. Brenneman.—p. 410.
Esophageal Hiatus Hernia. L. L. Perkel.—p. 414.
Group Practice: Answer to State Medicine. M. G. Bensley.—p. 418.
Treatment of Carcinoma of Rectum. D. B. Pfeiffer.—p. 421.

Oklahoma State Medical Assn. Jour., Oklahoma City

39:325-358 (Aug.) 1946

Acute Otitis Media; Its Management by General Practitioner and Pediatrician. J. D. Singleton.—p. 325.
Low Spinal Anesthesia in Obstetrics. P. Risser and R. Emanuel.—p. 329.
Practical Treatment of Neuroses. M. P. Prosser.—p. 333.
Nasal Fractures. O. A. Watson.—p. 337.

39:359-394 (Sept.) 1946

Diagnosis and Treatment of Pernicious Anemia. R. L. Haden.—p. 359.
Survey of the Pneumonias. S. Goodman.—p. 363.
Myasthenia Gravis. T. R. Turner.—p. 366.

39:395-442 (Oct.) 1946

Pulmonary Sarcoidosis. H. Hauser.—p. 395.
The Rh Blood Factors. H. F. Marsh.—p. 403.
X-Rays in Evacuation Hospitals. E. D. Greenberger.—p. 408.

Psychiatric Quarterly, Utica, N. Y.

20:371-548 (July) 1946. **Partial Index**

Allergic Reaction in Case Treated with Curare-Electric Shock, Followed by Recrudescence of Psychosis. S. Major.—p. 371.
Mental Disorder Following Service Discharge. J. A. Campbell.—p. 375.
Statistical Investigation of Incidence of Mental Disorder in Norway. O. Oedegaard.—p. 381.
Obesity and Neurosis: Case Report. H. B. Richardson.—p. 400.
Further Studies in Use of Adrenalin in Treatment of Persistent Anxiety States. D. E. Cameron.—p. 425.
Psychiatric Reactions to Wartime Stress as Seen in Members of Armed Services Referred to Private Mental Hospital. C. T. Prout.—p. 434.

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Public Health Reports, Washington, D. C.

61:1339-1368 (Sept. 13) 1946

Health Conditions in Certain Large Cities of Far East After Liberation. H. R. O'Brien.—p. 1339.

61:1369-1396 (Sept. 20) 1946

The Health Center: Adaptation of Physical Plants to Service Concepts. J. W. Mountin and A. Hoenack.—p. 1369.

Serologic Relationships in Epidemic-Endemic Typhus Group as Determined by Complement Fixation. Ida A. Bengtson.—p. 1379.

Rocky Mountain Medical Journal, Denver

43:697-780 (Sept.) 1946

Presidential Address. W. A. Bunten.—p. 716.

Surgical Treatment of Pituitary Adenoma. R. M. Stuck.—p. 721.

Relation Between Frequency of Alternating Current and Convulsive Threshold of Albino Rat. L. A. Woodbury and C. A. Swinyard. —p. 723.

Prepuberal Hyogonadotropic Eunuchoidism. C. G. Heller.—p. 723.

43:781-868 (Oct.) 1946

Presidential Address. A. C. Sudan.—p. 799.

Doctor's Answer to Socialized Medicine. M. C. Smith.—p. 805.

Use of Electroconvulsive Therapy as Office Procedure in Certain Mental Disorders. L. G. Moench.—p. 808.

Use of Penicillin in Treatment of Syphilis. M. S. Falk.—p. 813.

Scientific Findings on Death and Coroner's Inquest. T. R. Taylor. —p 817.

Southern Medical Journal, Birmingham, Ala.

39:761-846 (Oct.) 1946

Hypertension of Renal Origin: Case Reports. G. Carroll.—p. 761.

*Bacterial Endocarditis of Tricuspid Valve. L. Karotkin and P. Marcuse. —p. 769.

Tularemia: Treatment of Case with Streptomycin. W. G. Hartnett and S. G. Mollica.—p. 774.

Treatment of Herpes Zoster. W. W. Lovell.—p. 777.

*Spontaneous Rupture of Kidney: Case Report. D. E. Beard.—p. 780.

Volvulus of Stomach. C. A. W. Zimmermann III.—p. 782.

Psychosomatic Evaluation of Psychiatric and Endocrinologic Factors in Menopause. M. H. Greenhill.—p. 786.

Comparison of Effectiveness of Radiation Therapy and Estrogenic Substances in Management of Hyperthyroidism. E. H. Planck.—p. 794.

*Studies on Neuromuscular Dysfunction: VII. Use of Curare to Differentiate Muscle Spasm from Organic Changes in Limitation of Passive Motion at Joints. C. W. Jones, C. B. LeCompte and H. Kabat. —p. 799.

Vein Ligation in Thrombophlebitis. C. D. Hershey and R. B. Bailey. —p. 804.

Value of Influenza Virus Vaccine Types A and B. L. L. Friedman. —p. 809.

Effect of Vitamin A Administration on Defective Color Vision. J. A. Richardson and F. W. Kinard.—p. 811.

Report of Case of Aortic Aneurysm Rupturing into Superior Vena Cava. D. C. Wunderman.—p. 813.

Bacterial Endocarditis of Tricuspid Valve.—Karotkin and Marcuse say that the clinical picture of bacterial endocarditis of the left chambers of the heart is well known, while the clinical picture of bacterial endocarditis involving the right chambers is less well known. Early diagnosis of the involvement of the right side is difficult because signs of organic heart disease are often lacking, especially when the tricuspid valve is the only one involved. The blood culture usually remains negative, and systemic embolism fails to appear unless and until tissue breakdown occurs in the lungs. Cases in which the right and left heart chambers are both involved are more common than those in which the right side alone is involved. One should therefore always suspect the coexistence of a right sided lesion in a patient with known left sided bacterial endocarditis. Likewise, when a left sided bacterial endocarditis is suspected by bacteremia and evidence of systemic embolism fails to appear, one should suspect an isolated lesion on one of the right sided valves. Three different modes of pathogenesis arise for consideration in case of bacterial endocarditis: (1) bacterial involvement of a valve previously damaged by rheumatic endocarditis, congenital defect or trauma, (2) bacterial endocarditis as a sequel of pneumonia and (3) bacterial endocarditis as part of generalized septicemia. The findings in bacterial endocarditis of the bicuspid valve correspond with the rare occurrence of isolated rheumatic lesions on the tricuspid and with the fact that the valve is more likely to be implicated when the virulence of the organism is high. The clinical picture may become atypical early in the course of the disease because of impaired efficacy of the lung filter due to the presence of pulmonary lesions.

Spontaneous Rupture of Kidney.—According to Beard, spontaneous rupture occurs in a kidney already damaged by disease in which there is no history of trauma. Hydronephrosis, pyelonephritis, pyonephrosis, tuberculosis, abscess, infarct, nephritis, tumor, aneurysm and renal calculus have been the predisposing causes in the reported cases. The tear may be in the renal pelvis or in the parenchyma, the former of which leads to bleeding into the renal fossa while the latter leads to extravasation of urine within the perirenal fascia or peritoneum. In a kidney thus weakened by disease the slightest indirect trauma may rupture the organ. The author reports a case in which the rupture occurred while the patient was in bed. The condition can be diagnosed by careful history, physical examination and pyelography. Spontaneous rupture of the kidney is a surgical emergency, and prompt intervention is often a life saving measure. The case reported illustrates the prompt response to surgery with the postoperative administration of streptomycin in the presence of Proteus bacillus infection.

Curare to Differentiate Muscle Spasm from Organic Changes.—Jones and his associates experimented with curare in the differentiation of organic from functional factors in limitation of passive motion at joints. Seventeen patients showing limitation of passive motion at joints were given curare intravenously in the form of "intocostrin." Each patient received morphine sulfate ⅙ grain (8 mg.) and atropine sulfate $\frac{1}{200}$ grain (0.3 mg.) subcutaneously thirty minutes before the administration of curare. "Intocostrin" was administered in the operating room by a trained anesthetist, with tracheal tube, respirator and neostigmine to counteract the curare effect close at hand. The "intocostrin" was injected slowly into the antecubital vein. Each patient was given the amount of curare that rendered him unable to lift his head from the table and produced weakness of the hand grip and of the thigh muscles. Some patients were given an initial dose of 50 mg. while others received 20 mg. of "intocostrin." Additional curare was injected at intervals of two to four minutes until the desired effect was produced. The largest dose given was 100 mg. Eight cases showed increases in range of motion while under the curare effect, while 9 cases showed no essential change. The test should be of practical importance in establishing the correct approach to therapy. In 5 of 7 fracture cases which showed increase in range of motion from curare the improvement was retained in full or in part, which suggests the possibility of using curare as an adjunct to treatment of such cases. Curare can relieve joint pain by relaxation of muscle spasm.

Tennessee State Medical Assn. Journal, Nashville

39:311-346 (Sept.) 1946

Relief of Sulfadiazine Anuria by Spinal Anesthesia: Case Report. C. E. Newell.—p. 311.

Demerol Analgesia in Labor Combined with Spinal Anesthesia for Vaginal Delivery: Report of 1,000 Cases. A. K. Turner.—p. 314.

Para-Aminobenzoic Acid in Prevention of Sunburn. C. Shaw.—p. 329.

39:347-396 (Oct.) 1946

Proceedings of House of Delegates, One Hundred and Eleventh Annual Meeting, Tennessee State Medical Association, Hotel Andrew Johnson, Knoxville, April 9-11, 1946.—p. 347.

Wisconsin Medical Journal, Madison

45:1021-1112 (Nov.) 1946

Trends and Progress in Neuropsychiatry. H. H. Reese.—p. 1047.

Antibiotics. W. W. Spink.—p. 1053.

*Erysipeloid. W. L. Macaulay.—p. 1057.

Is Overspecialization a Threat? C. A. Dawson.—p. 1045.

Erysipeloid.—Erysipeloid of Rosenbach is a disease in man which is caused by Erysipelothrix rhusiopathiae, the organism of swine erysipelas. The first 4 of the 5 cases presented by Macaulay are typical of the clinical picture of erysipeloid. Three cases occurred in butchers and serve to reemphasize the occupational nature of the disease. The first 2 cases demonstrate the apparent inability of sulfonamides to control erysipeloid. The second case later responded promptly to penicillin. The third and fourth cases showed rapid subsidence of symptoms with penicillin as the sole therapeutic agent. The author comments on the recent increase in cases of erysipeloid and thinks that more can be expected. Penicillin is the best treatment.

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FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian J. Exper. Biol. & M. Science, Adelaide

24:159-252 (Sept.) 1946. **Partial Index**

Reduction of Nitrate, Nitrite and Hydroxylamine. J. Lascelles and J. L. Still.—p. 159.
Antibacterial Activity in Members of Higher Fungi: 1. Cortinarius Rotundisporus and Psalliota Xanthoderma Genev. Nancy Atkinson. —p. 169.
Structure and Elasticity of Cortex of Keratin Fibers: Electron Microscope Study. E. H. Mercer and A. L. G. Rees.—p. 175.
Clotting in Heart and Brain: Experimental Study. E. R. Trethewie. —p. 185.
Inactivation of Vaccinia and Ectromelia Virus Hemagglutinins by Lecithinase. J. D. Stone.—p. 191.
Lipid Hemagglutinins. J. D. Stone.—p. 197.
*Serologic Response to Influenza B Infection in Human Beings: Differentiation of Specific and Nonspecific Type Reactions. F. M. Burnet and J. D. Stone, with technical assistance of Margaret Kerr.—p. 207.
Liberation of Aneurin, Cocarboxylase, Riboflavin and Nicotinic Acid from Autolysing Yeast Cells. K. T. H. Farrer.—p. 213.
Cystine, Methionine and Sulfate Excretion in Cystinuria. Joan B. Cleland.—p. 219.

Specific and Nonspecific Reactions to Influenza B Infection.—Burnet and Stone show that convalescent serums taken after an influenza B infection show specific and nonspecific types of response. In children and adolescents the commonest type is specific, showing a much higher titer both by hemagglutination and by allantoic methods against a homologous strain than against the classic strain Lee. Most adults show equivalent titers against the two types of virus, but a proportion of specific responses is found. Influenza B virus strains isolated in 1943 or 1945 form a fairly homogeneous group when tested with specific human serums and differ sharply from Lee. The significance of these findings in relation to immunization against influenza B is briefly discussed.

British Journal of Radiology, London

19:393-436 (Oct.) 1946

Response of Tradescantia Pollen Grains to Radiation at Different Dosage Rates. P. C. Koller.—p. 393.
X-Ray Therapy with Continuously Rotating Beam: Part 1. Apparatus and Associated Physical Problems. R. J. Munson.—p. 405.
Radiologic Diagnosis of Lumbar Intervertebral Disk Lesions: Report of 160 Cases. H. W. Gillespie.—p. 420.
Case of Intersigmoid Hernia with Illustrations of X-Ray Appearances. G. G. Gotlieb.—p. 429.
Radiologic Investigation of Case of Pedal Hyperphalangism and Supernumerary Phalangeal Epiphysis. R. O'Rahilly.—p. 432.

British Medical Journal, London

2:601-638 (Oct. 26) 1946

Blood Group Rh: 1. Review of Antigenic Structure and Serologic Reactions of Rh Subtypes. D. F. Cappell.—p. 601.
*Receptivity of Cervical Mucus to Spermatozoa. Mary Barton and B. P. Wiesner.—p. 606.
*Acute Osteomyelitis of Lumbar Spine in Adult. H. Freeman.—p. 610.
Nicotinamide Deficiency After Oral Administration of Penicillin. P. Ellinger and F. M. Shattock.—p. 611.
Work of Government Lymph Establishment: July 1898 to June 1946. H. S. Fremlin.—p. 613.

Receptivity of Cervical Mucus to Spermatozoa.—According to Barton and Wiesner, semen and cervical mucus are virtually immiscible. Fecundation depends on the ability of the sperms to penetrate the interface between mucus and semen. In many sterile women the mucus does not admit or sustain spermatozoa. The nonsurgical treatment of cervical dysfunction is briefly surveyed.

Osteomyelitis of Lumbar Spine in Adult.—A man aged 43 presented symptoms that were regarded as indicative of Pott's disease. Laboratory examinations, however, suggested a pyogenic rather than a tuberculous abscess. Aspiration of the abscess yielded pus with Staphylococcus aureus. The further development and exposure of the abscess indicated that the pus had tracked from the lumbar spine into the pelvis, along the structures, passing through the sacroiliac foramen to the gluteal region and to the front of the thigh, where pressure on the femoral vein resulted in generalized swelling of the limb. The abscess cavities were insufflated with sulfathiazole powder mixed with 100,000 units of penicillin, and a drainage tube was inserted. A transfusion of 2 pints of blood was given, and penicillin in 30,000 unit doses intramuscularly was continued four hourly. The patient recovered, so that he could walk freely without discomfort. Freeman points out that the case is of special interest because of the insidious onset, the age of the patient and the resemblance to tuberculous disease of the bone and the development of a large collection of pus in the presence of a small area of bone necrosis.

East African Medical Journal, Nairobi

23:257-292 (Sept.) 1946

Epidemiology of Malaria in East Africa Command. D. Bagster-Wilson. —p. 258.
*Efficacy of Insecticidal Sprays in Aircraft. P. C. C. Garnham.—p. 272.
Tropical Myositis in East Africa. O. N. Ransford.—p. 278.
Penicillin Treatment of Acute Gonorrhea and Its Complications, and Early Syphilis (in Africans) as Practiced in East Africa Command. G. C. Cochrane.—p. 285.
Treatment of Early Syphilis (in Africans) with Penicillin Sodium. G. C. Cochrane.—p. 287.

Efficacy of Insecticidal Sprays in Aircraft.—According to Garnham, routine disinfestation of aircraft is now carried out practically everywhere in the tropics. The author describes a simple test which uses mosquitoes in cages as an indicator to check the efficacy of the disinfestation of aircraft. The results suggest that the simple methods used in the disinfestation of aircraft are adequate, even for the more inaccessible parts of the machines, provided the dosage is large enough and the solutions are freshly prepared. There is one exception, however, and that is the apparent ability of mosquitoes to survive even heavy doses if protected by any sort of cloth. Although the initial excitatory effect of the insecticide may drive out mosquitoes hidden in coat sleeves and similar places, the danger remains.

Lancet, London

2:587-626 (Oct. 26) 1946

Coronary Disease: Harveian Oration of 1946. M. Cassidy.—p. 587.
Serum Protein Level of Indian Soldiers. M. Hynes, M. Ishaq and T. L. Morris.—p. 590.
*Leptospirosis Canicola: Case Treated with Penicillin. M. D. Baber and R. D. Stuart.—p. 594.
*Malignant Granuloma of Nose. S. W. G. Hargrove, J. H. Fodden and A. J. Rhodes.—p. 596.
Psychiatry at Corps Exhaustion Center: Technic of Rapid Psychiatric Assessment. F. P. Haldane and J. L. Rowley.—p. 599.
Malted Foods for Babies: Trials with Young Rats. Harriette Chick and E. B. Slack.—p. 601.

Penicillin in Leptospirosis Canicola.—Baber and Stuart's patient was a boy aged 11 who had bathed in the Thames and whose disorder was diagnosed as infection with Leptospirosis canicola by the demonstration of a rising serum antibody titer to L. canicola during the course of the illness and by absorption tests with homologous and heterologous strains of leptospira. The patient was treated with 220,000 units of penicillin, and dramatic clinical improvement followed. Since this is the first case of L. canicola infection discovered in Britain, it is unfortunate that the organism was not isolated from the patient, but on serologic grounds the evidence is quite definite.

Malignant Granuloma of Nose.—In the man whose illness is described by Hargrove and his associates the main feature was a rapidly spreading ulcerative condition involving the antrum, nose and palate. The histologic picture was that of an acute granuloma with necrosis. It is impossible to decide whether the condition was due to an infection or to an unusual type of sarcomatous change.

Medical Journal of Australia, Sydney

2:361-396 (Sept. 14) 1946. **Partial Index**

Functional Disorder Sequent to Organic Disease. A. W. Holmes à Court. —p. 361.
Typing of Bacterium Typhosum. G. Buckle.—p. 365.
Looking Backward: Quarter-Century of Pediatrics. D. G. Croll.—p. 371.
Sexual Problems of Childhood and Adolescence. H. M. North.—p. 376.

2:397-432 (Sept. 21) 1946. **Partial Index**

Singapore and After: Brief Historical Survey of Activities of Australian Army Medical Corps in Malaya. A. P. Derham.—p. 397.
Some Aspects of Protein Metabolism in Infants and Children. F. W. Clements.—p. 404.

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Tubercle, London

27:151-172 (Oct.) 1946

*Aspiration Type of Congenital Tuberculosis. W. Pagel and S. Hall. —p. 153.
"Officer Into Physician." F. Ridehalgh.—p. 159.
Morbidity of Tuberculosis—Statistical Aspects: II. N. J. England. —p. 162.
Dicumarol Prophylaxis in Thoracic Surgery. H. M. Maier and M. M. Alexander.—p. 167.

Aspiration Type of Congenital Tuberculosis.—Pagel and Hall report the universal spread of submiliary foci throughout both lungs of a girl aged 17 days and confluent caseation in the hilar lymphatic glands. Caseous plugs abounding with acid fast bacilli were found to fill dilated bronchioli and alveolar ducts, forming "multilocular" foci resembling those obtained in primary intratracheal infection with heavy inocula and consistent with infection by coarse aspiration. A congenital origin suggests itself because of (1) the wide extent of the lesion, (2) the picture differing from the pulmonary "primary complex," (3) the extensive cellular reaction of the lung stroma, incompatible with seventeen days' duration. The wide and obviously primary involvement of the bronchial system points to infected amniotic fluid as the source and to aspiration as the mode of infection. Although clinical or pathologic data as to the condition of the mother, placenta and amniotic fluid were not available, it is reasonable to suppose that the latter was at one time infected with tubercle bacilli and aspirated.

Presse Médicale, Paris

54:557-568 (Aug. 31) 1946

Symptomatologic Value of Cholinesterase of Blood. P. Cristol, P. Passouant, C. Benezch and Miss J. Dutarte.—p. 557.
*Malignant Primary Tuberculosis of Adults. A. Dufourt.—p. 558.
Intravenous Injections of Atropine and Procaine Hydrochloride in Syndromes Presented by Pain Occurring During Digestion. P. Oury, A. Bensaude and J. Brossard.—p. 559.

Malignant Primary Tuberculosis of Adults.—According to Dufourt, severe and often fatal pulmonary tuberculosis resulting from primary infection in adults represents in the great majority of the cases the first and secondary stage rather than the third stage of the disease. Either the patient may have primary cavities, or the breaking down of a lymph node may lead to bronchopneumonia or to miliary or generalized tuberculosis resembling that occurring in children. Death may result within the first year or within the first months of an exacerbated second stage. Only a few patients have been observed who presented the third stage after a brief secondary stage of tuberculosis. In 1 of the author's patients the allergy was detected. This was followed by pleurisy; after an interval of six months osteitis developed in twelve ribs and was rapidly followed by dissemination of the process. A severe and prolonged infection may be responsible for malignant primary tuberculosis of adults.

Semaine des Hôpitaux de Paris

22:1413-1486 (Aug. 14) 1946. **Partial Index**

Use of Isotopes in Biology. M. Berger.—p. 1413.
Study of Mechanism of Action of Bromotriphenylethylene by Using Radioactive Bromine of Estrogenic Substance as Indicator. M. Berger. —p. 1416.
Gangrene and Steroid Hormones: Experimental Study on Antagonistic Effect of Sex Hormones and of Some Steroids on Vasoconstrictive Action of Ergotamine. G. Simon.—p. 1420.
Anatomic and Functional Renal Disturbances in Course of Anuresis Due to Sulfonamide Treatment: Clinical and Experimental Study. P. Castaigne.—p. 1425.
Disturbances of Growth Determined by Experimental Renal Lesions. P. Castaigne.—p. 1435.
Study of Respiratory Function in Hospital and in Occupational Medicine Laboratory. P. Tulou.—p. 1446.
Experimental Study of Muscular Fatigue and Work Capacity in Animals. C. Laroche.—p. 1458.
*Capillary Resistance and Vitamin with Effect on Permeability. P. Galmiche.—p. 1463.

Capillary Resistance and Vitamin P.—Galmiche reports the occurrence of scurvy in a woman aged 75. The food supply of the patient was that provided by the ration card. She ate only boiled food and abstained from eating raw fruit and vegetables. Peribuccal purpura associated with severe chills was followed by generalized purpura involving the mucous membranes and the viscera. The patient's condition deteriorated in spite of intravenous administration of 1 Gm. of ascorbic acid daily for twenty days. Parenteral administration of 5 Gm. of vitamin C daily for four days was ineffective. An intravenous injection of 12 mg. of epicatechine (one of the isomers of 3.5.7.3'4' penta hydroxyphenyl benzo-gamma-pyrane) was given, and two more injections of 8 Gm. were given on the two following days. There was rapid improvement, and complete recovery resulted within a few days. The bleeding time was reduced from 14 minutes to 3 minutes, and hematuria subsided.

Cardiologia, Basel

10:193-304 (No. 4/5) 1946

Normal Contraction and Auricular and Ventricular Fibrillation in Turtle (concluded). P. Rijlant.—p. 193.
Influence of Vegetative Drugs on Changes in T Waves in Electrocardiogram Made After Severe Exercise. A. Walser.—p. 231.
*Repeated Familial Incidence of Acquired Failures of Cardiac Valves. H. K. v. Rechenberg.—p. 251.
Local Amyloidotic Changes Simulating Arteriosclerosis in Heart. S. Hirsch.—p. 280.
Cardiac Trauma Produced by Blunt Force (Commotio and Contusio Cordis). M. Kartagener.—p. 289.

Familial Incidence of Cardiac Failure.—Von Rechenberg reports the occurrence in a family of rheumatic cardiac involvement in the father, in 1 son and 1 daughter and in 1 illegitimate son of the mother. In 3 of the patients the cardiac failure was associated with acute rheumatic polyarthritis. Familial incidence of cardiac failure suggests that hereditary factors may play a part in the pathogenesis of acquired cardiac failures. These factors are (1) hereditary predisposition to diseases in which involvement of the heart is part of the disease, (2) congenital cardiac inferiority on a hereditary base and (3) local hereditary predisposition of the valves toward disease. The hereditary predisposition may, from the genetic point of view, be always the same although its manifestations may vary considerably, depending on the predominance of one or the other of the hereditary factors, on the time when this factor becomes effective and on the influence of the environment. Severe congenital defects of the heart, simple uncomplicated vitia cordis, fetal endocarditis and acquired failure of the cardiac valves may be interrelated so far as the genesis and the evolution of pathologicoanatomic events are concerned. Familial incidence of cardiac failure depends on a hereditary predisposition but does not represent a specific hereditary disease. Hereditary incidence of cardiac failure is related to congenital heart failure, rheumatism and bacterial endocarditis.

Schweizerische medizinische Wochenschrift, Basel

76:791-814 (Aug. 24) 1946. **Partial Index**

*Rheumatic Perispondylitis of Cervical Spinal Column and Cervical Syndrome. W. Belart.—p. 797.
Substances Inhibiting Thyroid Action and Endemic Struma. H. J. Wespi-Eggenberger.—p. 801.
*Carcinoma of Islands of Langerhans Without Endocrine Manifestations. W. Hess.—p. 802.
Use of Hormone of Adrenal Cortex in Eclampsia. W. Laubscher. —p. 804.

Rheumatic Cervical Perispondylitis and Cervical Syndrome.—Belart designates as cervical syndrome a clinical entity which manifests itself chiefly in paresthesias in the hands with neuralgiform pains and a leaden heaviness in the arms. Later this becomes complicated by stiffness of the neck and radiation of pain from the neck to the occiput and the shoulders. This syndrome is traced back to rheumatic perispondylitis or rheumatic inflammation of the soft tissues of the spinal column, particularly to involvement of the ligaments and to multilocular tendoperiostitis. These spread to the sympathetic nervous system centered there and cause various sympathetic disturbances. The terminal phase of the perispondylitis is spondylosis. As regards the etiology, not only the mechanism of focal infection plays a part but also the continuous spread from the tonsils. There may be a causal connection not only with spondylosis, which represents the terminal phase of perispondylitis, but also with muscular rheumatism, neuritis, neuralgia, osteoporosis of the spinal column, chronic meningitis and neurovegetative dystonia.

Carcinoma of Islands of Langerhans Without Endocrine Manifestations.—Hess was able to collect reports of 19 cases of carcinoma of the islands of Langerhans from litera-

ture. Whenever the sugar metabolism was studied in these cases hyperinsulinism was discovered, except in the thoroughly investigated case of Dubois-Ferrière. The author reports a case in which necropsy established a pancreatic carcinoma that originated in the insular tissue. In contradistinction to most other tumors of this type, this cancer had produced no insulin and had not produced hypoglycemia. This was explained by the fact that the cancer was composed exclusively of the endocrinically inactive alpha cells. This observation indicates that it is essential to differentiate between malignant insular tumors with hyperinsulinism (beta nesocytomas) and those without disturbance of the sugar metabolism (alpha nesocytomas).

Lisboa Medica, Lisbon

23:99-188 (March-April) 1946. **Partial Index**

*Infectious Mononucleosis in Puerperium, with Subclinical Infection of Newborn Infant. C. Trinção.—p. 146.

Infectious Mononucleosis in Puerperium.—A pregnant woman at full term developed acute urticaria without fever. Three days later she delivered a normal baby. She nursed the baby. One week after the delivery the patient presented symptoms of acute infection with fever, and tender, enlarged lymph nodes of the neck. Penicillin was not effective. The blood picture was characteristic for infectious mononucleosis. There was a leukocytosis. Nearly all lymphocytes were abnormal. The Paul-Bunnell test for infectious mononucleosis was positive for the blood serum but negative with the mother's milk. The disease subsided within twelve days. The baby was apparently normal. His blood showed the same changes as the mother's blood, with the same type of abnormality in the majority of the lymphocytes. Blood smears from 12 normal infants between 9 and 26 days old showed normal lymphocytes in all. This is the first case of subclinical infectious mononucleosis in an infant most probably acquired before birth.

Acta Chirurgica Scandinavica

94:193-384 (July 6) 1946. **Partial Index**

Aspects of Operative Treatment of Cancer Recti. K. A. Hultborn. —p. 193.
Harelip and Cleft Palate. P. Fogh-Andersen.—p. 213.
Differential Diagnosis and Treatment of Tuberculomas in Lung. E. Dahl-Iversen and P. Flemming Møller.—p. 243.
*Clinical Picture and Treatment of Pheochromocytomas of Adrenals. T. Espersen and E. Dahl-Iversen.—p. 271.
Mechanism of Infection in Chronic Relapsing Staphylococcic Diseases: Clinicobacteriologic Investigation Particularly on Furunculosis and Its Complications. M. Sulamaa.—p. 291.
Postoperative Blood Changes with Regard to Shock. S. Annersten and E. Norinder.—p. 320.
Acute Regional Enteritis. A. Homb.—p. 341.
Problem of Surgical Arrest of Massive Hemorrhage in Peptic Ulcer. G. Bohmansson.—p. 362.
Operation for Habitual Luxation of Thumb. S. von Stapelmohr.—p. 379.

Pheochromocytomas of the Adrenals.—According to Espersen and Dahl-Iversen a pheochromocytoma is a tumor caused by abnormal proliferation of mature medullary cells. The first of the 2 patients seen was a man aged 49 who had paroxysmal hypertension due to benign pheochromocytoma of the right adrenal. The epinephrine content of the blood was found to be from four to five times increased during attacks. Treatment with methyl thiouracil resulted in complete disappearance of the attacks. Good results were obtained by removal of the tumor, which weighed about 1,400 Gm. The second patient, a boy aged 10 years, had permanent hypertension due to a pheochromocytoma which operation through a left lumbar incision failed to demonstrate. The patient died six hours after the exploratory intervention. Necropsy revealed a malignant pheochromocytoma in front of the large vessels. It was connected by a small pedicle with the lower mesial angle of the left adrenal. The only effective treatment is extirpation as soon as the diagnosis has been established and the patient's condition permits. The preoperative treatment would be like that in extirpation of the adrenals. The authors think that it might be best to choose the abdominal approach in all cases of pheochromocytoma. When the tumor is large they recommend the use of Shipley's incision. The danger of shock during operation can be counteracted by adrenal cortex extract, blood transfusion and, if necessary, epinephrine.

Acta Psychiatrica et Neurologica, Copenhagen

21:1-816 (1-3) 1946. **Partial Index**

Dreamy States, Epileptic Aura, Depersonalisation and Psychasthenic Fits: Comments and Reflections. N. Antoni.—p. 1.
Treatment of Tabes Dorsalis with Artificial Fever: Hyperthermia Treatment. J. Boas.—p. 39.
*"Dynamite Encephalosis." B. Gerle.—p. 319.
Complications and Dangers in Use of Hypnotism: Brief Sürvey. A. Hofman-Bang.—p. 365.
Alcohol Paranoia. A. Petren.—p. 655.
Discharge of Psychiatric Patients After Hospitalization for Years. J. C. Smith.—p. 735.
Amyotrophic Cerebrospinal Syphilis. G. Vraa-Jensen.—p. 795.

"Dynamite Encephalosis."—Gerle reports that a man in the course of work with explosives, while doing home defense duty, once had to tie explosives together into small bundles. It was an unusually hot and humid day. The dynamite was packed in coarse paper, which had broken here and there, so that the patient now and again came into direct contact with the dynamite. He got hot and wiped the perspiration away repeatedly. About 7 p. m. the man asked for headache tablets. He was given some codeine. At 10 o'clock he suddenly became violent and had to be held by several men. On being transported to the hospital he coughed and vomited. He complained of heartburn and a severe headache. Motor agitation alternated with confusion. After five days he was discharged. There was a striking change in his behavior. His previous brightness and liveliness were gone. He was less alert, very moody, irritable and complaining. He showed amnesia for the time before his falling ill and the ride to the hospital. Headaches continued to trouble him. The headache is the cardinal symptom of glyceryl trinitrate intoxication. For about a month the patient showed lowered alertness, deficient concentration, increased fatigue, irritability and depression.

Nordisk Medicin, Gothenburg

30:1289-1352 (June 14) 1946. **Partial Index**

Biology of Lymphocyte: Review. E. Andreasen.—p. 1289.
Fatal Case After Intravenous Gonovaccine Therapy. C. E. Sonck. —p. 1293.

Hospitalstidende

Accumulation of Effect of Sunlight Compared with Seasonal Variation of Rickets and Tetany. P. Horstmann and Helge Petersen.—p. 1297.
Speed and Vision of Colored Light. W. Byrn.—p. 1300.

Duodecim

*Near Distance Roentgen Therapy. A. Pmar Arho.—p. 1303.
Overdosage of Vitamin D with Fatal Outcome. J. Jääskeläinen. —p. 1308.

Norsk Magasin for Lægevidenskapen

*Surgical Treatment of Tuberculous Pleural Empyema. H. F. Harbitz. —p. 1314.

Near Distance Roentgen Therapy.—Arho reports that primary healing occurred in 197 (93.3 per cent) of the 211 cases of skin cancer treated from 1938 to 1944 by Chaoul's modified method. Fourteen cases were resistant to the treatment, in 18 recurrence appeared; the unfavorable results in two thirds of these cases is ascribed to technical mistakes in treatment. In cancer of the eyelid near distance therapy seems superior to the usual roentgen and radium treatment, as the danger of irradiation cataract is reduced to a minimum. In benign skin disorders the method is as effective as other forms of irradiation. In palliative treatment of metastases from cancer of the breast and malignant melanoma it gives better results than the usual roentgen treatment, especially if the metastases extend over large areas.

Surgical Treatment of Tuberculous Pleural Empyema.—Harbitz describes 22 cases of chronic tuberculous pleural empyema treated during the last seven years. In 6 cases the pleural cavity was closed during the treatment; 16 were fistulous and drained. Radical thoracoplasty in several stages was done. The average duration of treatment was four months and three weeks. Two patients (1 with closed, 1 with fistulous empyema) died immediately, 5 (1 with closed, 4 with fistulous empyema) died later from their tuberculous disease. The surviving 15 are abacillary; 1 has a persisting fistula and amyloid degeneration, 14 are cured, and of these 13 have been working for from one and a half to seven years.

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Book Notices

Harvey Cushing: A Biography. By John F. Fulton. Cloth. Price, $5. Pp. 754, with illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois, 1946.

Previously to his death Dr. Harvey Cushing made a provision in his will that a sum of money be set aside to help defray the expenses of compiling an account of his life, should his wife and his literary executor feel that the publishing of his biography might be of interest or help to medical students. In the preface to his biography of Dr. Cushing Dr. John F. Fulton, who was for many years associated with him, emphasizes the intention to prepare a work which would have the medical student primarily in mind. At the same time the endeavor was made to produce a biography that would interest nonmedical readers. Thus the work, while voluminous, fails to devote much detailed attention to the technical phases of neurosurgery or to the pathology of tumors of the brain.

Fortunately for the biographer, Dr. Cushing had collected and annotated the papers related to his family for many years, he kept a diary and his case histories were likewise scrupulously prepared and preserved. Early in his career Dr. Cushing became facile in sketching, and his diary as well as his case histories were accompanied with sketches, many of which are reproduced in the book. Any one who had the privilege of meeting and talking with Dr. Harvey Cushing recognized in him an alert and sensitive mind and the spark that is characteristic of genius. Moreover, if genius is the capacity for taking infinite pains associated with hard work, that characterization even more certainly applied to Dr. Harvey Cushing.

Following a detailed introduction to the young man and to his family background liberally supplemented with quotations from letters and portions of the diary, Dr. Fulton describes the first trip abroad and the return of Cushing to Baltimore in 1896, where he became Halsted's assistant resident in surgery. It becomes clear that the young man during the period of his studies in medicine and his internship gave little indication of the greatness that was to follow. Yet at the same time, the mere keeping of the diary and the comments revealed him well above the average of medical students. We find him on several occasions in 1893 disgusted with his progress, suffering occasional headaches and at least twice contemplating suicide. Perhaps it is a mark of greatness to suffer frequently with the feeling of discontent and dissatisfaction. Even in the midst of these depressions there are gleams of humor in which he recounts some delightful anecdotes and makes a comment such as the one relative to having broken one of his molars on some boardinghouse tapioca. The five years at Johns Hopkins University influenced Cushing greatly. He derived much from his association with Halsted and no doubt began there his first interest in books, bookplates and the acquisition of a library.

In 1900 Cushing had to make one of those tremendous decisions that come to a young man—where he would go after the completion of his service with Halsted. He made the wise decision for further study rather than in favor of increased income elsewhere. The illness of Halsted gave him opportunity for a vast amount of surgical work which might not otherwise have been available to him.

Much of the rest of the life of Harvey Cushing has been described in many notices published at the time of his death, but these hardly give the intimate detail of the innumerable decisions that he had to make in matters related to surgical appointments, research and the cases in which he operated during the years of his career. His service in the first world war has been described in his own notebooks, but the letters and documents in Dr. Cushing's files provide background material and are highly instructive. One gets the picture of a genius, a veritable virtuoso who does not fit easily into any one's classification or regimentation and whom associates and others learned to respect for his special virtues and to forgive because of these special virtues for some extraordinary quirks of character. If there is any criticism to be made of this book, it is of its enormous detail, which will detract from the interest of many readers not specifically in the field of medicine. Medical readers once embarked on its text are likely to follow through page by page for the information and attitudes so clearly set forth. It might be well for the author and publisher to consider the employment of a competent biographer or writer to make from this large volume a work of perhaps 100 or 200 pages written especially for the public, which would benefit so much by knowledge of the career of Harvey Cushing. Those portions of his will pertaining to the biography and disposition of his library are cited in the appendix. They cast further light on the virtuosity of the greatest of brain surgeons.

The Care of the Aged (Geriatrics). By Malford W. Thewlis, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York. Fifth edition. Cloth. Price, $8. Pp. 500, with 65 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1946.

Dr. I. L. Nascher, generally recognized as the father of geriatrics, was the first man to apply the term to the study and treatment of conditions incident to old age. When he gave up private practice to enter the public welfare department of New York City, his mantle fell on his favorite pupil, Dr. Malford W. Thewlis. The first edition of Thewlis's Care of the Aged was published in 1919. The fact that the fifth edition is now off the press gives evidence that it has met a favorable reception from the medical profession. The volume has been completely revised and a number of new subjects have been included. It is divided into eight parts, on general considerations, geratology, medicolegal relations, miscellaneous geriatric problems, diseases of metabolism and endocrine disorders, infectious diseases and focal infection, systemic pathologic conditions and special topics. This edition, like its predecessors, is characterized by a common sense approach to the conditions peculiar to old age. It is so well written that reading it is a pleasure, and the pleasure is enhanced by the fact that the book contains no excess verbiage. An example of the common sense which marks the whole book is to be found in the section on logotherapy: "Logotherapy (Gk. *logos*, word; *therapia*, healing) might be defined as the therapeutic influence of words upon diseased persons. One's first impression might be that this is a form of psychotherapy which should be employed by psychologists and psychiatrists. This is not the meaning I wish to convey. On the contrary, a careful selection of words may spare the elderly patient much mental suffering, thus making it unnecessary for the psychotherapist to clean up the wreckage physicians have produced by a tyranny of words. It is obvious that severe emotional disturbances are often caused by the wrong choice of words." Geriatrics is becoming more and more a household word. Dr. Thewlis's book can be recommended to all who want to learn more about the subject.

Illustrations of Regional Anatomy. By E. B. Jamieson, M.D. Section I: Central Nervous System; Section II: Head and Neck; Section III: Abdomen; Section IV: Pelvis; Section V: Thorax; Section VI: Upper Limb; Section VII: Lower Limb. Sixth edition. Paper. Loose-leaf. Price, 12s.; 15s.; 10s.; 8s. 6d.; 7s. 6d.; 10s.; 12s. 51 plates; 64 plates; 44 plates; 35 plates; 32 plates; 42 plates; 52 plates. E. & S. Livingstone, 16 & 17 Teviot Place, Edinburgh 1, 1946.

These little volumes, one each for the central nervous system, head and neck, abdomen, pelvis, thorax, arm and leg, consist of a series of 6 by 8 inch plates bound in such a way that the sheets are removable for convenience in dissecting. They are printed in color on only one side of fairly heavy coated paper. There is no text, and only the briefest of legends appear beneath the pictures. The plates are completely and clearly labeled, and color is used unsparingly to differentiate structures. The unique character and value of the work lies in the original and lucid presentation of gross anatomy in a manner that can be easily comprehended by medical students. Dr. Jamieson states in the preface that the first edition, which appeared in 1934, was an outgrowth of the blackboard diagrams which he used in teaching his classes at the University of Edinburgh. One can well believe it, because successive revisions and additions have not changed the author's approach to his subject. The characteristic feature of the plates is still their simple and highly graphic character. Despite (or perhaps on account of) Dr. Jamieson's diagrammatic conceptions and bright colors, one somehow manages to get a clearer architectonic idea of the human body in much less time

from these illustrations than from a more lengthy perusal of the standard textbooks of anatomy. From an esthetic standpoint or as a literal transcription of the appearance of anatomy the plates do not rate overly high. However, as illustrations, in the pure sense of the word, they are excellent. It is obvious that author and artists were not inhibited by precedent or current styles in anatomic drawing but knew exactly what they wanted to do and did it. A first impression of the plates is the extensive use of color. For instance, all pictures of bone show the articular surfaces in uniform purple. Tendons, ligaments and fascia are indicated by a bright green. One may wish that the colors, which are sometimes a bit violent, were a little more restrained, but undoubtedly they achieve the purpose the author had in mind. There are no subtleties in the plates nor is there any question about what they are meant to convey. Anatomists may find that the labeling on the plates, while always explicit, occasionally departs from the terminology used in this country. Gynecologists, who make a point of such things, may not agree with Dr. Jamieson on the large size of the perineal body as shown in the sectional views of the female pelvis. These are minor points, however, and have little weight against the overall high teaching value of the illustrations.

Thromboses artérielles: Physiologie pathologique et traitement chirurgical. Par René Leriche, professeur au Collège de France, avec la collaboration d'Ivan Bertrand, directeur de l'Institut de neurobiologie à la Salpêtrière. Paper. Price, 600 francs. Pp. 537, with 59 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e, 1946.

The remarkable intellectual resilience of the French, whose literary output is now gradually emerging after years of nightmare, is well documented in this monograph on arterial thrombosis. Leriche has written a true functional pathology of the vascular system restating and broadening his many pioneer views in the form of lectures presented at the Collège de France in 1944. In the preface he expresses regret for not documenting more of his recent views by animal experimentation; this was, however, obviously impossible during the German occupation. The monograph consists of a large number of clinical observations discussed in chapters on traumatic thrombosis, thromboangiitis, vascular sclerosis, coronary thrombosis and many other syndromes, which the author discusses from both the organic and the functional point of view. Leriche has stimulated more than any other man a phenomenal development of vascular surgery in the last twenty years. In the development of this field he has thrown out a multitude of ideas or novel conceptions; some of these have become accepted, are experimentally and clinically proved and have greatly enriched our tools of therapy. Others were erroneous, required modification or have gradually been eliminated. It is the typically French genius of Leriche to advance a subject on the basis of his clinical observations, deductions and analogies, which are so frequently frowned on by the sober research worker whose "feet are on the ground." While much material in this monograph sounds far from convincing and while much work will have to be done to document or disprove many of the statements, such work should prove an intellectual stimulus to those interested in vascular surgery and its advancing frontiers.

Body Mechanics in Nursing Arts. By Bernice Fash, B.P.E., B.S. Cloth. Price, $2.75. Pp. 130, with illustrations. McGraw-Hill Book Company, Inc., 330 West 42d St., New York 18, 1946.

This book is well set up and freely illustrated. The illustrations are well done as drawings and show considerable thought. Well controlled imagination has been used in the development of both the text and the illustrative drawings. As a teaching textbook its brevity and simplicity are good. As read by the person already well educated and well versed in nursing it would seem that a good share of the material was unnecessary. Many of the situations of bad posture described and their good postural alternates occur so automatically to one well acquainted with nursing and body posture that at first it seems strange to include them. The real worth of the book lies in the ability of the author to understand the student nurse's mind, get back to early essentials and realize that what perhaps seems obvious to the physician is an unexplored field to the student. The descriptions of methods of handling patients with greatest economy of effort and least danger of strain are really excellent.

X-Rays and Radium in the Treatment of Diseases of the Skin. By George M. MacKee, M.D., Professor of Clinical Dermatology and Director of Department of Dermatology (Skin and Cancer Unit) New York Post-Graduate Medical School and Hospital, Columbia University, New York, and Anthony C. Cipollaro, M.D., Assistant Professor of Dermatology and Assistant Director of Department of Dermatology (Skin and Cancer Unit) New York Post-Graduate Medical School and Hospital, Columbia University. Contributor: Hamilton Montgomery, M.D., Associate Professor of Dermatology, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester, Minnesota. Fourth edition. Cloth. Price, $10. Pp. 668, with 321 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1946.

This edition of MacKee's book is in every way an excellent and authoritative presentation of the subject of therapy of cutaneous diseases by x-rays and radium. It is shorter than its predecessors by some two hundred pages—always a welcome improvement—and there is better unity of organization of material in this edition than in the previous ones. This edition was written with but one collaborator, Dr. Cipollaro, and one contributor, Dr. Hamilton Montgomery, who wrote the complete and excellently illustrated chapter on pathologic histology of radiodermatitis. The book covers every phase of the subject from a historical introduction to a consideration of medicolegal aspects of x-ray and radium therapy. The chapters dealing with the fundamentals, the structure of matter, the nature of radiation, dosage, technic, physics, filtration, apparatus, protection, idiosyncrasy and biologic and biochemical effects of radiation are written with a clarity that makes a complicated subject interesting and easily understood. The material is amply illustrated. One half of the book is devoted to the treatment of various skin diseases from acne to zoster. This section is particularly practical, for it gives proper emphasis to the more important diseases. Actual dosages in roentgens and technical details with regard to filtration and treatment intervals are furnished to guide the practitioner. The undertone of conservatism in this section reflects interestingly the progress of dermatology in the past thirty years. Chemotherapy for some diseases and a better comprehension of the causation of others have replaced radiation therapy in many instances and, as the authors state in the preface, it is possible that radiation therapy will be employed even less frequently in the future. Nevertheless radiation therapy is still a most important modality and there may be many who will disagree with the authors' too conservative views. The book accurately reflects our present knowledge of radiation therapy; it is thoroughly up to date, complete, practical, well organized, fully indexed and excellently illustrated. It is recommended as a useful guide for any physician who employs x-ray and radium therapy for diseases of the skin.

What You Don't Know May Hurt You! By J. A. Rudolph, M.D., and Howard N. Rose, B.A. Cloth. Price, $1.50. Pp. 138, with illustrations. Dorrance & Company, 5th & Chestnut Sts., Philadelphia 6, 1946.

This small book is packed full of brief case reports illustrating various forms of allergy. It contains innumerable examples of possible allergies; possibly it contains so many that the point of the illustrations may become lost. Explanatory material is rather limited in quantity and elementary in type and is almost lost among the numerous illustrative case histories. In general, however, it should be useful to suggest possibilities for the cause of allergy and as a source of suggestions for possible approaches to treatment. Scientifically it is sound. Its brevity and its low price should make it a popular book among allergic patients and their long-suffering families.

Some Properties and Applications of D.D.T. Great Britain, Ministry of Supply, Chemical Defence Research Department. Paper. Price, 15 cents; 6d. Pp. 34. British Information Services, 30 Rockefeller Plaza, New York 20; His Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, 1946.

This brief monograph summarizes much of the information now available concerning the chemistry, toxicity and uses of DDT. It has been compiled from published literature and from reports of work carried on within the United Kingdom and elsewhere. The monograph is not offered as a complete review of the subject but will provide for the average reader a useful guide for information on the physical and chemical properties of DDT, toxicity, formulas, means of dispersal and effectiveness.

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Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PENICILLIN BLOOD LEVELS

***To the Editor:*—What is the duration of effective blood levels of penicillin when 200,000 units is thoroughly emulsified with Emulgen (Lakeside) or Pendil (Endo). What dosage is recommended in severe infections? What is the average duration of effective blood levels of 300,000 units of penicillin in oil and wax?**

J. W. Mehaffey, M.D., Birmingham, Ala.

ANSWER.—It has been demonstrated by Romansky and others that single injections of 300,000 units in peanut oil and beeswax will give maximum levels in 75 to 80 per cent of cases of 0.1 unit per cubic centimeter for a period of twelve hours or longer. As far as is known, this is the only method that has been developed that delays the absorption of penicillin local deposits in muscles. The studies that have been made with lanolin and cholesterol-like substances such as Pendil and Emulgen have been so infrequent that there is not good evidence that these substances delay absorption of penicillin.

A careful search of the literature does not disclose information concerning penicillin levels in the blood or effectiveness in diseases other than gonorrhea when penicillin is injected in these water and oil emulsions. In the curves that have been published showing the levels after injection of penicillin in water and oil emulsion there is little evidence that the absorption is delayed and certainly the levels in the blood decrease rapidly after the first hour.

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DIARRHEA AND TRICHOMONAS HOMINIS

***To the Editor:*—A woman aged 60, otherwise in good health, has had diarrhea of four months' duration. Several stool specimens, checked by a reliable pathologist, have been found to contain Trichomonas organisms. The patient lives on a farm, does some milking and helps care for farm animals. She has never had Trichomonas vaginitis. Please discuss the diagnosis and treatment.**

Antony Parsons, M.D., Valley, Neb.

ANSWER.—Trichomonas hominis is an intestinal flagellate which usually inhabits the lower part of the ileum and the cecum, where it is sometimes found in abundance. The organism is seldom seen in formed stools but is not infrequently present in diarrheal states, such as bacillary and amebic dysentery, as the fluid consistency of the stools in these conditions forms an excellent medium for the growth of the parasite. Since Trichomonas hominis is almost invariably found only in diarrheal states, some observers have considered the parasite an etiologic agent of diarrhea. Competent investigators, however, have observed little experimental or clinical evidence to support the claim that the organism, per se, is capable of initiating diarrhea.

According to Craig and Faust an animal reservoir of Trichomonas hominis is not known; birds, reptiles and fish harbor species belonging to the genus and some species are found in cattle, dogs, cats, rats and other animals.

In a determination of the etiologic factor or factors of the diarrhea of the patient in question, the following is suggested:

A complete physical examination should be performed, including vaginal examination and search for Trichomonas vaginalis. Routine studies of the blood and urine and x-ray examination of the stomach, colon and small intestine are indicated, as neoplasms of the gastrointestinal tract, regional enteritis and inflammatory lesions of the colon frequently are associated with diarrhea as a presenting symptom and may be disclosed only by x-ray. Proctosigmoidoscopy is of value in determining the presence of rectal disease and in differentiating various rectal lesions when present. Stool cultures and warm stool examinations are of value in demonstrating significant intestinal pathogens. If the stools are bulky or frothy, quantitative fecal fat determination may disclose steatorrhea. A basal metabolic rate determination may disclose a masked hyperthyroidism which may manifest itself by diarrhea. If these procedures fail to reveal any significant cause for the diarrhea, careful investigation of the patient's emotional problems, her fears and anxieties, should be determined, since tension and anxiety states not infrequently are manifested by gastrointestinal symptoms, including diarrhea.

A low residue bland diet may be instituted as trial therapy in conjunction with sedation such as phenobarbital ½ grain (30 mg.) and belladonna ⅛ grain (8 mg.) after meals and at bedtime. Added hours of rest are often of value. If no improvement is obtained after several weeks to a month with this regimen, repetition of the diagnostic procedures may be desirable, as a lesion sometimes not evident at a first examination may be disclosed later.

POSSIBLE LATE MUSTARD GAS KERATITIS

***To the Editor:*—In World War I a Canadian field gun received a direct hit from an enemy gas shell, sending most of its crew to the hospital with mustard gas burns. A new gun with a fresh crew was immediately wheeled into the same pit and many of these men also developed mustard gas vapor irritation. One soldier had swelling of the eyelids and an irritation of the scalp, which disappeared in a few weeks. In 1937 this man developed a right corneal ulcer, which did not entirely heal for several months, although he was not totally incapacitated during this time. The cornea remained cloudy with the vision reduced to about 20/100. In May 1946 there was a recurrence, and in June 1946 a 5 mm. ulcer was noted with surrounding corneal opacity and conjunctival and deep ciliary congestion. The pupil was free. Useful vision was not present. Although there was pain this was not as severe as expected. After treatment with atropine and heat for three weeks the ulcer healed almost entirely, but the cornea showed diffuse opacity and vascularization. There were residual photophobia, redness and pain. The possibility of a delayed mustard gas vapor burn was considered. Please discuss the etiology and treatment of this condition.**

H. H. Sharp, M.D., Sussex, N. B., Canada.

ANSWER.—It is possible that the patient described in the query has recurrent corneal ulcers as a result of mustard gas burns acquired in World War I. However, a definite diagnosis cannot be made from the description given. Late mustard gas keratitis has been described by Duke-Elder in his Text Book of Ophthalmology and also recently by Mann and Pullinger. The characteristic picture of this condition is intense vascularization by new blood vessels into the cornea, springing from dilated and fusiform conjunctival loops, a tendency for the sclera to invade the cornea in places, lack of corneal sensitivity in the affected area, cholesterol crystals, fatty degeneration and what Mann calls "silkiness," defined as a dappling and fine short lines. The treatment is an unhappy one. Contact glasses offer the best prospect of relief from discomfort and breakdown of the cornea. The cholesterol crystals should be picked out of the cornea, as smooth a surface as possible being left. Obliteration of the limbal vessels by repeated cauterization sometimes helps.

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TOXICITY OF METHYLENE DICHLORIDE AND METHYL CHLORIDE

***To the Editor:*—A patient has a contact dermatitis due to a refrigerant agent, methylene and methyl chloride. His friends state that all workers with this substance eventually have heart and kidney trouble. Please discuss the effects of these compounds.**

C. C. Mansell, M.D., Lubbock, Texas.

ANSWER.—Neither methylene dichloride nor methyl chloride is important as a source of contact dermatitis. At the present time methylene dichloride is widely sponsored as the hydrocarbon of choice in hand metal cleaning because of its relatively low toxic and skin irritation properties. The chief objection is its skin chilling action, its boiling point being near 40 C. Likewise systemic damage is of low prospect. This is reflected in the fact that it has enjoyed limited use as a general anesthetic. Its narcotic action is much less (two and one-half times) than that of chloroform, but it produces an alarming excitatory period. In the concentration requisite to anesthesia prompt cyanosis, dyspnea, dilated pupils and tachycardia may occur. In animals high concentrations induce renal and hepatic damage.

The consensus as to industrial usage is that methylene dichloride (dichloromethane) is comparatively innocuous except from gross acute exposures. Three hundred parts per million may be tolerated for prolonged periods—this by contrast with carbon tetrachloride with its upper limit of safety near 50 parts per million.

Methyl chloride provides a greater risk. Apart from its acute narcotic action and danger from local freezing under some circumstances, methyl chloride is dangerous when taken into the body, owing to the fact that it readily decomposes with the formation of methyl alcohol (methanol, wood alcohol). Every gram of methyl chloride taken into the body provides 0.63 Gm. of methyl alcohol. Thus methyl chloride represents a potential cumulative poison as well as an acute narcotic. Numerous deaths have followed gross exposures in connection with refrigeration, chiefly from breaks in lines of multiunit systems. Such deaths were so prompt as to preclude any likely methyl alcohol action. Notwithstanding well recognized dangers from methyl chloride, as a practical danger it falls well below carbon tetrachloride. Regular exposure to 200 parts per million is probably tolerable.

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Henderson, Yandell, and Haggard, H. W.: Noxious Gases, New York, Reinhold Publishing Corporation, 1943.
McNally, W. D.: Toxicology, ed. 2, Beloit, Wis., Industrial Medicine, 1937.

PERIODIC SWELLING OF BREAST IN MEN

To the Editor:—**What is the cause and treatment of unilateral periodic swelling of the breast of man? There is a definite visible swelling which occurs in the same breast every four to eight weeks in a man aged 46. A tumor is not palpable and there is no discharge of any kind from the nipple, spontaneously or on pressure.**

M.D., New York.

ANSWER.—The periodic swelling of the breast in the absence of a palpable tumor suggests the possibility that there may be some estrogenic stimulation of the breast. Sometimes under such a stimulation one breast enlarges with but little enlargement of the other. In some males with hypogonadism there may be a slight enlargement of one or both breasts, possibly as a result of a disturbance in the estrogen-androgen ratio. The fact that the swelling is periodic makes it desirable to search for a tumor which produces estrogenic material. This might be present in either a testis or an adrenal gland. It would be desirable to know whether or not any breast tissue is palpable and whether or not there has been any enlargement of the areola and nipple. Such changes would strongly suggest the likelihood of estrogenic stimulation.

EXCRETION OF SODIUM CHLORIDE IN URINE

To the Editor:—**Please explain the value of measuring the total twenty-four hour excretion of sodium chloride in the urine. What is normal, and what do a low excretion and a high excretion indicate? What is the most satisfactory method of determining the total sodium chloride excretion for the general practitioner?**

M.D., Michigan.

ANSWER.—The determination of the twenty-four hour renal excretion of sodium chloride (chloride calculated as sodium chloride) is little used in the clinic at the present time. The normal adult range of sodium chloride excretion varies from 8 to 15 Gm., although values from 5 to 20 Gm. may be found, the average output being close to 10 Gm. per day. Normally this represents the salt intake of the previous twenty-four hours.

Low chloride excretion is generally associated with a hypochloremia, and a study of the plasma chloride and bicarbonate level is more useful as a rule than the quantitative determination of the urinary chloride excretion, although both determinations may be done. In pyloric obstruction and other conditions in which excessive vomiting occurs, the level of the plasma chloride may drop to the renal threshhold value, in which case urinary excretion of chloride practically ceases. Very low values are likewise encountered in pneumonia and other fevers; but, when the crisis has passed, the chloride excretion rapidly increases and for a short period may exceed the normal output. This is a favorable prognostic sign. In cardiorenal conditions both hyperchloremia and hypochloremia may occur, but the picture is so complicated that no generalizations regarding chloride excretion can safely be made. An excessive loss of chloride and sodium in the urine occurs in adrenal cortex insufficiency (Addison's disease) and a test for the diagnosis of this condition has been proposed on this basis.

A simple and sufficiently accurate method for the estimation of chloride in urine has been described by Samuel C. Harvey, The Quantitative Determination of the Chlorides in the Urine (*Arch. Int. Med.* **6**:12 [July] 1910).

ORGANIZATIONS OF LARYNGECTOMIZED PATIENTS

To the Editor:—**I understand that there is a "Lost Chord Society," membership in which is based solely on successfully undergoing a laryngectomy. Where are the headquarters of this society and who are its officers? Where can a patient who has had a laryngectomy receive information on artificial voice aids?**

M.D., California.

ANSWER.—The Lost Chord Society has not been identified. The "Anamilo Club" of New York, which was organized at the National Hospital for Speech Disorders, is composed of persons who have had their larynx removed. At the request of the attending surgeon a special committee of the club calls on patients who contemplate this type of operation. Artificial larynxes are manufactured by Otto Roberts, 705 Spivey Building, St. Louis, and by the Illinois Bell Telephone Company. Information can be obtained from Mrs. Tillie Brinkman, 505 West Belmont Avenue, Chicago.

ACTION OF DEHYDROCHOLIC ACID

To the Editor:—**Is there anything that will dissolve gallstones clinically? What action has D-cholic acid on preformed stones?**

Willis P. Baker, M.D., Santa Ana, Calif.

ANSWER.—Nothing has been found that will dissolve gallstones clinically. Dehydrochloric acid (D-cholic) is a potent hydrocholeretic agent which will dilute bile by increasing its water content and volume. Dilution of the bile and frequent emptying of the gallbladder are measures which one might reasonably expect to reduce the likelihood of the formation of calculi under certain conditions. The use of bile salts and frequent fat feeding in the management of patients with biliary tract disease has been discussed recently:

Dolkart, Ralph E.: Medical Treatment of Biliary Tract Disease, *Illinois M. J.* **87**:43 (Jan.) 1945.
Brown, Clarence F. G., and Dolkart, Ralph E.: Ketocholanic Acids in the Medical Management of Low Grade Gallbladder Disease, THE JOURNAL, Feb. 6, 1937, p. 458.

EFFECTS OF CHOLAGOGUES ON CORONARY OCCLUSION

To the Editor:—**Would there be any harm if a cholagogue, such as "Depropanex," should be given to a patient with coronary thrombosis because of a mistaken diagnosis?**

Clifford W. Atherton, M.D., Stambaugh, Mich.

ANSWER.—Cholagogues in general will not have any deleterious effect on patients with coronary thrombosis. However, unless given in the event of a mistaken diagnosis, they should be avoided.

Depropanex is a deproteinated pancreatic extract free from insulin, histamine and acetylcholine. It relaxes muscle spasm and depresses sympathetic nervous system sensitivity. It is used chiefly in the treatment of intermittent claudication and to promote ureteral relaxation. It probably would not have any harmful effect on a patient with coronary occlusion.

INFLUENZA VACCINES

To the Editor:—**Is there any evidence that one type of influenza virus vaccine is superior to another? I refer to the calcium phosphate absorbed type manufactured by Parke, Davis and Company and the regular or "Armed Services" type produced by Eli Lilly and Company. An industrial group is to be immunized and I wish to reassure it as to the potency of the preparation.**

M.D., Pennsylvania.

ANSWER.—There is little information as to the comparative prophylactic value in human beings of different preparations of influenza vaccine. All preparations are licensed by the National Institute of Health and presumably should meet the same requirements for potency as determined through laboratory tests.

ULCERATIVE STOMATITIS

To the Editor:—**While it is obvious that exhaustive discussions are beyond the scope of a section such as Queries and Minor Notes, the treatment accorded the subject of ulcerative stomatitis and gingivitis (*The Journal* Nov. 2, 1946) seems inadequate. To confine this discussion to the fusospirochetal variety is like limiting consideration of respiratory infections to abscess of the lung. The fact is, of course, that there are many other ulcerative inflammations of the oral mucosae and gums. Perhaps more important to the general practitioner, these stomatitides are often caused by, and sometimes are the leading presenting symptoms of, blood dyscrasias, nutritional deficiencies, exanthems, dermatoses and poisonings. In the majority of these cases, positive smears of fusospirochetal organisms are nevertheless recovered. It is the responsibility of the practitioner to differentiate between those of local origin and those which signal systemic disorders. In the one instance it is good practice to refer the patient to the dentist, in the other to establish the correct diagnosis as a guide to appropriate treatment. Even allowing for the incomplete résumé, the prominent therapeutic roles of dental prophylaxis and penicillin in primary fusospirochetal infection should not have been omitted.**

Leo Stern, D.D.S., Chicago.

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